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# Development and Evaluation of a Compensatory Screening Model for Navy Non-High School Diploma Graduate Applicants

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Navy recruits who have not attained a traditional high school diploma (NHSDGs) fail to complete their first-term enlistments at twice the rate of diploma graduates (HSDGs). However, research shows that the highest quality NHSDG recruits complete obligated service at a rate similar to HSDGs. The objective of this research was to develop a compensatory screening model (CSM) for selecting Navy NHSDG applicants. The CSM is intended to address Congressional concerns about the treatment of applicants in the alternative credential categories who have demonstrated attrition rates comparable to those of HSDGs. The model predicts the probability that the applicant will complete the first 24 months of enlistment, conditional upon the following predictors: number of years of education completed, educational credential attained, age at application, Armed Forces Qualification Test (AFQT) category, employment status, participation in a military youth program, and moral waiver status. Evaluation analyses demonstrate that the model provides significant increases in predictive validity over those of both AFQT percentile and the Success Chances for Recruits Entering the Navy (SCREEN) formula, due to inclusion of the biographical predictors. An operational test and evaluation has commenced to evaluate the CSM in the operational recruiting environment.

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# Foreword

This research was conducted under the Adaptability Screening Program in support of Work Request Number N0002291WRASP01. It was sponsored by the Chief of Naval Operations (N1) and the Office of the Assistant Secretary of Defense, Personnel and Readiness.

This report describes the technical development and evaluation of a compensatory screening model (CSM) for selecting non-prior service Navy applicants who do not possess a traditional high school diploma.

The support of Captain James C. Kinney and Dr. Clessen Martin of the Bureau of Naval Personnel (BUPERS-23) in the overall development and implementation of the model is gratefully acknowledged. Dr. James McBride and Mr. Jack Dempsey of the Human Resources Research Organization (HumRRO) developed preliminary statistical procedures and databases during the early phases of CSM development. Mr. Jeffrey Barnes and Mr. Ric Blacksten of HumRRO developed recruiter training materials and computer software that were instrumental in system implementation. Finally, Dr. Edward Schmitz, Mr. Jim Barnes, and Mr. Carl Kannapel of the Navy Recruiting Command contributed to a timely operational deployment of the CSM.

W. A. SANDS
Director, Personnel Systems Department

# Summary

**Background and Problem**

Non-high school diploma graduate (NHSDG) recruits fail to complete their enlistment contracts at approximately twice the rate of high school diploma graduate (HSDG) recruits. Verifiable biographical data has the potential to increase the predictive validity of screening instruments used to select Navy NHSDG applicants. Additionally, members of Congress have expressed increasing concern about selection procedures that exclude applicants with alternative educational credentials from service. Empirical evidence suggests that the attrition rates of the highest quality NHSDG recruits are comparable to those of HSDG recruits.

**Objective**

The objective of this research was to develop a compensatory screening model (CSM) and administrative procedures to select Navy NHSDG applicants during the CSM Operational Test and Evaluation (OT&E). The CSM and administrative procedures must:

1. Address Congressional concerns about the treatment of alternative credential holders.

2. Incorporate the traditional mental aptitude, educational attainment, and age predictors, as well as biographical data predictors that were specified by the Bureau of Naval Personnel (BUPERS), including employment status, moral waiver status, and military youth program participation.

3. Demonstrate incremental predictive validity and sufficient face validity to be accepted and used by recruiting personnel in an operational environment.

4. Be "recruiter friendly" and allow recruiting personnel to select NHSDG applicants in accordance with the probability of completing the first 24 months of their initial tour of duty.

5. Use applicant information that recruiting personnel can readily verify.

**Methodology**

Logistic regression was used to develop a CSM for predicting the probability that the applicant would finish the first 24 months of enlistment. The seven predictor variables include number of years of education, type of education credential attained, age at application, Armed Forces Qualification Test (AFQT) category, employment status, military youth program participation, and moral waiver status. Because only partial employment status data were available, a procedure was developed to simulate the missing data from other available information so that employment status could be incorporated in the CSM. An NHSDG Application Form and instructions were developed to allow Navy recruiting personnel to administer the CSM during its OT&E.

**Results and Discussion**

Due to the inclusion of biographical data, the CSM demonstrated significant increases in predictive validity over those demonstrated by the AFQT percentile score and the Success Chances

for Recruits Entering the Navy (SCREEN) formula. The model also yielded higher correct acceptance (true positive) rates than did the SCREEN formula. Evaluation analyses show that the model parameter estimates are not significantly affected by curtailment due to preselection of the accession sample. Slightly higher proportions of blacks and Hispanics were found to be ineligible at the proposed CSM cut score. The absence of employment status information in the CSM evaluation sample and the possibility of major differences between the NHSDG applicant population during the OT&E and the CSM evaluation sample may limit the generalizability of the results presented here.

**Conclusions and Recommendations**

The CSM has the potential to improve the retention rates of NHSDG recruits providing that the cut score used accepts only the highest quality applicants. This expectation will also provide increased opportunity for some applicants who possess education credentials associated with high attrition risk to demonstrate enlistment eligibility by compensating with higher scores on other selection factors.

BUPERS-23 should monitor the applicant population during the OT&E to determine the extent to which it differs from the samples used to develop and evaluate the CSM. Data collected during the OT&E should be utilized to:

1. Revise the CSM according to operational results.

2. Monitor for adverse impact on minority groups.

3. Provide a normative population of NHSDG applicants.

4. If necessary, modify the cut score to adjust for differences between the OT&E applicant population and the CSM model development and model evaluation samples.

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# Introduction

## Background and Problem

During the 1980s, the Joint Services developed the Armed Services Applicant Profile (ASAP) (Trent & Quenette, 1992) in an effort to use applicant biographical data (biodata) to improve validity when predicting attrition from military service. Although the ASAP biodata items demonstrated a significant increase in validity when they were used to supplement traditional mental aptitude and educational attainment predictors, the services have expressed concern that this increase might deteriorate over time due to recruiter coaching and applicant faking. Consequently, the ASAP has not been implemented operationally. However, the incremental validity obtained from the use of biodata is not expected to deteriorate over time if applicants are required to provide verification of such information.

The ASAP research led to the consideration of using a compensatory screening model (CSM) for selection purposes (Dempsey, Laurence, Waters, & McBride, 1991; Trent, Folchi, & Sunderman, 1991). Specifically, the effort focused on using verifiable biodata to select non-high school diploma graduate (NHSDG) applicants for Navy recruitment. Research has shown that NHSDG Navy recruits fail to complete their first-term enlistments at twice the rate of high school diploma graduate (HSDG) recruits. For the purposes of this report, an NHSDG is an individual who does not satisfy the criteria for inclusion in Tier I of the three-tier educational credential system used by the Department of Defense (DoD) to define its accession policy. Figure 1 indicates the relationship between the three-tier system; the recruit-quality cells A, B, C, and D; and the Armed Forces Qualification Test (AFQT) mental groups. The alternative degree credentials in the NHSDG category include General Education Development (GED) diploma, high school certificate of attendance, home study diploma, occupation program certificate, and correspondence school diploma. Navy enlistment policies have generally required that NHSDG recruits satisfy higher mental aptitude criteria than HSDGs (Laurence, 1987). Research also shows that the highest quality NHSDG recruits complete obligated service at a rate similar to that of HSDG recruits. In addition, the costs associated with recruiting NHSDG applicants are generally lower because recruiters typically do not recruit them as actively as they recruit HSDGs.

As the prevalence of individuals with alternative credentials has increased and the number of NHSDGs recruited has declined in recent years, members of Congress concerned with military manpower issues have become more critical of selection procedures based upon the three-tier system. These critics contend that applicants with certain types of alternative credentials perform as well as HSDGs and that other attributes of the individual should be factored into the selection process. In response, research has focused on incorporating the applicant's education credential status into the selection process in a manner that captures the historical attrition performance of all individuals with similar credential status.

Navy recruit selection procedures have contributed to the high attrition rates of NHSDGs. Recruiters often fill NHSDG goals with any available applicants who satisfy the minimum AFQT requirement, instead of waiting for better qualified applicants. In addition, approximately 3% of the applicants who enter the Delayed Entry Program (DEP) with an intention of obtaining a high school diploma fail to do so when their scheduled shipping date arrives. These fail-to-graduate applicants are often processed for enlistment as HSDGs, because there is no well-defined procedure for making enlistment decisions about them, even though they are greater risks to attrite than HSDGs.

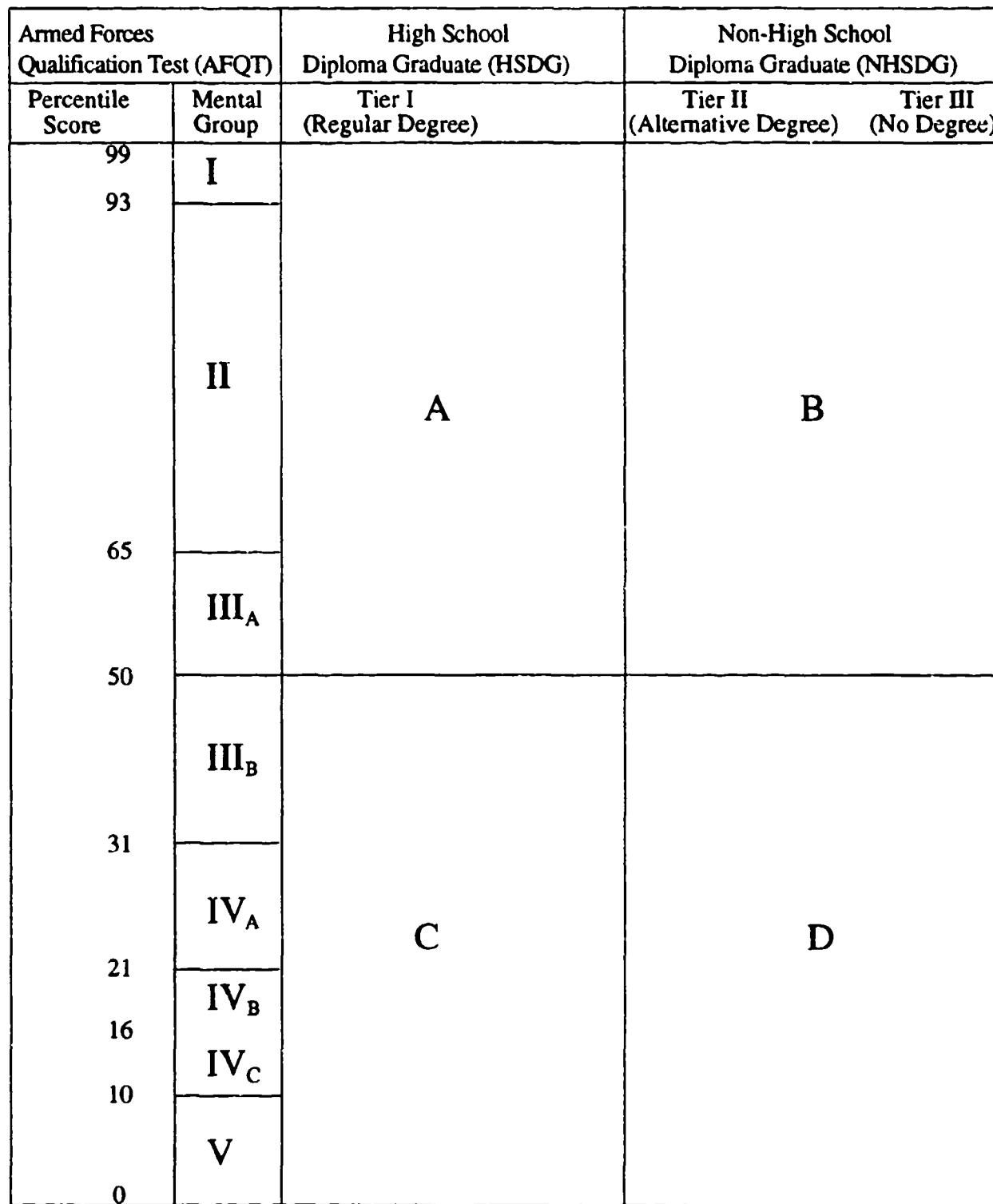| Armed Forces Qualification Test (AFQT) | | High School Diploma Graduate (HSDG) | Non-High School Diploma Graduate (NHSDG) | |
|---|---|---|---|---|
| Percentile Score | Mental Group | Tier I (Regular Degree) | Tier II (Alternative Degree) | Tier III (No Degree) |
| 99 | I | | | |
| 93 | | | | |
| | II | A | B | |
| 65 | | | | |
| | III$_A$ | | | |
| 50 | | | | |
| | III$_B$ | | | |
| 31 | | | | |
| | IV$_A$ | C | D | |
| 21 | IV$_B$ | | | |
| 16 | IV$_C$ | | | |
| 10 | | | | |
| | V | | | |
| 0 | | | | |

Figure 1. Relationship between three-tier system, quality cells, and AFQT mental groups.

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## Objective

The objective of this research was to develop a CSM and administrative procedures to select Navy NHSDG applicants during the CSM Operational Test and Evaluation (OT&E). The CSM and administrative procedures must:

1. Address Congressional concerns about the treatment of alternative credential holders.

2. Incorporate the traditional mental aptitude, educational attainment, and age predictors, as well as biodata predictors specified by the Bureau of Naval Personnel (BUPERS), including employment status, moral waiver status, and military youth program participation.

3. Demonstrate incremental predictive validity and sufficient face validity to be accepted and used by recruiting personnel in an operational environment.

4. Be "recruiter friendly" and allow recruiting personnel to select NHSDG applicants in accordance with the probability of completing the first 24 months of their initial tour of duty.

5. Use applicant information that recruiting personnel can readily verify.

# Methodology

## Samples

Because no single database contained all the data required to develop and evaluate the CSM, Navy non-prior service NHSDG data from FY85, FY88, and FY89 were utilized for different purposes. All databases were created by merging data elements from the Military Entrance Processing Reporting System (MEPRS) monthly service tapes and the Defense Manpower Data Center (DMDC) Cohort files.

The FY89 sample was used for model development because it was the most current and most representative sample that afforded 2-year service tracking data. In addition, this sample included verified employment status information for approximately 5% of the cases, while the FY88 sample had no employment status information. The FY88 sample was used for model evaluation analyses because it was the most current and most representative sample available that was independent of the FY89 sample. The FY85 sample was used to simulate missing employment data because, unlike FY88 and FY89 samples, it contained complete, although unverified, employment status information for the entire sample.

### FY85 Accession Sample

The FY85 accession sample consists of 951 Navy NHSDG accessions who were administered the Armed Services Vocational Aptitude Battery (ASVAB) between 1 December 1984 and 1 March 1985. The FY85 sample was used to develop a regression model for simulating the missing employment data in the FY88 and FY89 samples. Trent and Quenette (1992) note that this sample may not be entirely representative of the FY88 and FY89 NHSDG accession population.

## FY88 Applicant Sample

The FY88 applicant sample consists of Navy NHSDG applicants who were processed at Military Entrance Processing Stations (MEPS) during FY88. Of the 22,784 applicants in the sample, 7,470 subsequently enlisted. Unlike the FY85 sample data, the FY88 applicant data include all education credential categories currently recognized for the purposes of MEPS processing, including the home study and correspondence school diplomas.

## FY89 Applicant Sample

The FY89 applicant sample consists of Navy NHSDG applicants who were processed at MEPS during FY89. Of the 24,171 applicants in the sample, 9,360 subsequently enlisted. As with the FY88 sample, all education credential categories currently recognized for the purposes of MEPS processing are represented in the FY89 sample.

The FY89 sample included employment data from a Center for Naval Analyses study that examined whether Navy NHSDG accessions with a demonstrated ability to adapt to a work environment have lower attrition rates (Cooke, 1991). This study, hereafter called the Worker-B study, determined that NHSDG accessions with 8 or more months of continuous employment on their application demonstrated lower attrition rates than NHSDG accessions who did not. The Worker-B study was administered nationally by Navy recruiters to Cell B applicants (i.e., NHSDG applicants with an AFQT percentile score of 50 or more; see Figure 1) processed during FY89. Recruiters identified 505 accessions who satisfied the 8-month criterion; 436 of them were matched during creation of the FY89 applicant file. All FY89 accessions who satisfied the 8-month employment criterion are hereafter referred to as Worker-B accessions; those not specifically identified as such, as non-Worker-B accessions.

## Model

Logistic regression was used to develop a CSM for predicting service completion as a function of the predictor variable set for several reasons. Maximum likelihood estimates of the logistic parameters are asymptotically optimal, meaning that their variance converges to a theoretical minimum if the sample size is sufficiently large (Kendall & Stuart, 1961). In contrast, an ordinary least squares (OLS) model is not optimal for predicting a dichotomous criterion such as completion of military service. OLS parameter estimates do not have minimum variance because the underlying OLS model assumptions are not satisfied when the criterion is dichotomous (Aldrich & Nelson, 1984). Thus, a logistic regression model is more appropriate for predicting a dichotomous criterion. In addition, logistic regression requires relatively weak assumptions about the data set being analyzed (Press & Wilson, 1978). Use of the logistic model has been approved by the Manpower and Accession Policy Working Group and Defense Advisory Committee for Military Personnel Testing for other CSM development work being performed by DoD.

The logistic regression CSM may be written as

$$\Pr(\text{Comp24} = 1 \mid x_1, x_2, \ldots, x_7) = \frac{1}{1 + \exp\left(-\beta_0 - \sum_{i=1}^{i=7} \beta_i x_i\right)}. \tag{1}$$

In this model, Comp24 is a binary criterion variable (described below) and Pr (Comp24 = 1 | $x_1$ $x_2$, ..., $x_7$) represents the conditional probability that the applicant succeeded on the criterion, given scores on the seven predictor variables $x_1$, $x_2$, ..., $x_7$ described below. $\beta_1$, $\beta_2$, ..., $\beta_7$ are logistic regression coefficients and $\beta_0$ is the constant parameter. A maximum likelihood technique was applied to estimate $\beta_0$, $\beta_1$, ..., $\beta_7$ in the FY89 accession sample (Hosmer & Lemeshow, 1989; SAS Institute Inc., 1985).

## Criterion

The criterion, Comp24, indicates whether or not the applicant successfully completed the first 24 months of his or her initial tour of duty. Comp24 was coded as 1 for successful completion of 24 months, 0 for pejorative attrition before completion of 24 months, and 9 for non-pejorative attrition before completion of 24 months. Comp24 is computed from the applicant's Interservice Separation Code (ISC) and the number of days served during the initial tour. Appendix A indicates how the ISCs were classified for computing Comp24. Attrites with non-pejorative ISCs were excluded from development of the CSM.

## Predictor Variables

The seven predictor variables in the model include number of years of education, type of education credential attained, age at application, AFQT category, employment status, military youth program participation, and moral waiver status. Predictor scale scores were computed for each category within the seven predictors. The number of categories in each predictor was intentionally kept small so that recruiting personnel could calculate a CSM score using only a hand-calculator and the NHSDG Application Form shown in Appendix B. The scales were constructed so that all seven predictor variables were positively correlated with Comp24.

All scale values represent the proportion of accessions in the corresponding category who achieved success on the criterion. Except as otherwise noted, these proportions (hereafter called completion rates) were computed from an augmented FY89 sample. The augmented sample ($N$ = 11,843) included FY89 Navy accessions with Adult Education and One Semester of College credentials, in addition to the FY89 accession sample. Although applicants with Adult Education and One Semester of College credentials are currently considered HSDGs, BUPERS policy required that they be included in development of the CSM.

### Years of Education

Years of Education was initially included as a predictor to satisfy BUPERS policy. Subsequent analyses demonstrated that it made a beneficial contribution. The Years of Education scale was based upon the number of years of formal academic education the applicant completed. The Years of Education categories, scale values, and associated sample sizes are shown in Table 1.

### Education Credential

The highest level of education attained by the applicant plays an important role in selection because it is considered to be a measure of the applicant's ability to adapt to a regimented environment. Consequently, Education Credential was included as a predictor in the model.

## Table 1

### Years of Education Scale Values

| Number of Years of Education | Scale Value | Sample Size |
|:---:|:---:|:---:|
| < 10 | .552 | 2,208 |
| 10 | .611 | 3,386 |
| 11 | .642 | 4,340 |
| ≥ 12 | .675 | 1,909 |

The Education Credential scale values are determined from completion rates computed by DMDC using DoD data for FY88 and FY89 (FY88/89). Most of the scale values are completion rates computed by DMDC for the correspoi ding credentials, using Navy data only. However, due to small sample sizes for the correspondence school diploma, the home study diploma, and the occupational program certificate categories, scale values for these credentials could not be accurately estimated from Navy data alone. Consequently, scale scores for these three credentials were computed using DMDC's Navy and DoD completion rates in the formula

$$\text{ScaleScore}_i = \text{DODCR}_i \times \frac{\text{ONCR}}{\text{ODODCR}}, \tag{2}$$

where

|  | $\text{ScaleScore}_i$ | = Scale Score for education credential category i, |
|---|---|---|
|  | $\text{DODCR}_i$ | = DoD completion rate for educ.ation credential category i, |
|  | ONCR | = overall FY88/89 Navy completion rate, |
| and | ODODCR | = overall FY88/89 DoD completion rate. |

The overall Navy and DoD completion rates were determined by collapsing the respective Navy and DoD completion results computed by DMDC across all credential categories. The Education Credential categories and the scale values estimated from this procedure are shown in Table 2.

### Age at Application

Age was included in the model because it has been used in previous selection models, such as the Success Chances for Recruits Entering the Navy (SCREEN) formula (Lockman & Lurie, 1980; Sands, 1977). The Age scale was based upon the applicant's age on the date of application for enlistment. Since the date of application was unavailable, it was approximated by date of physical examination (for applicants who took the high school ASVAB test) or date of ASVAB testing (for applicants who did not take the high school test). The age categories and scale values are shown in Table 3.

**Table 2**

**Education Credential Scale Values**

| Education Credential | Scale Value | Sample Size |
|---|---|---|
| No Secondary Credential | .611 | 8,563 |
| General Education Development (GED) Diploma | .628 | 6,610 |
| Adult Education Diploma | .636 | 3,027 |
| Correspondence School Diploma | .653 | 115[a] |
| One Semester of College | .663 | 1,884 |
| High School Certificate of Attendance | .707 | 205 |
| Home Study Diploma | .776 | 98[a] |
| Occupational Program Certificate | .779 | 147[a] |

[a]DMDC's DoD Accession FY88/89 Sample.

**Table 3**

**Age at Application Scale Values**

| Age | Scale Value | Sample Size |
|---|---|---|
| 17 | .577 | 2,903 |
| 18 | .609 | 3,191 |
| 19 | .647 | 2,163 |
| 20 | .668 | 1,146 |
| ≥ 21 | .646 | 2,440 |

**AFQT Category**

AFQT percentile score is a measure of the applicant's mental aptitude, which is a significant factor in the selection decision. The AFQT Category scale in the CSM is determined from the applicant's AFQT percentile score. The scale values are shown in Table 4. The scale score for category III was determined from the combined completion rate of accessions in the IIIA and IIIB categories because, when the scales were developed, it was uncertain whether applicants in category IIIB would be eligible for enlistment. However, BUPERS policy currently requires an NHSDG applicant to qualify for category IIIA or above to be eligible for enlistment.

**Employment Status**

Following the results of the Worker-B study, BUPERS stipulated that the CSM include applicant employment status. This policy also required that applicants continuously employed for

## Table 4

## AFQT Category Scale Values

| AFQT Category | Percentile Score | Scale Value | Sample Size |
|---|---|---|---|
| III | 31-64 | .607 | 7,957 |
| II | 65-92 | .648 | 3,709 |
| I | 93-99 | .746 | 177 |

at least 1 month at the time of enlistment receive preference over unemployed applicants and applicants who have been employed less than 1 month. The minimum employment period of 1 month was established to discourage temporary employment schemes for the sole purpose of qualifying for Navy enlistment.

The Worker-B study identifies only those FY89 accessions who were continuously employed for 8 months or more. The Worker-B data did not differentiate between accessions who were employed between 1 and 8 months and those who were unemployed or were employed for less than 1 month. Consequently, a linear regression equation was developed to simulate employment data for the non-Worker-B accessions and develop an Employment Status scale with the following categories:

1. Employed Less Than 1 Month or Not Employed.
2. Employed at Least 1 Month But Less Than 8 Months.
3. Employed 8 Months or More.

The dependent employment variable in the regression model consisted of unverified ASAP item responses in the FY85 accession sample. Accessions were considered employed if their responses to the ASAP item concerning employment status indicated that they were employed either part-time or full-time. The following independent variables were used in the regression model:

1. Years of Education scale score.
2. Military Youth Program Participation scale score.
3. Moral Waiver status (not including drug abuse).
4. Drug Abuse Waiver status (i.e., was a moral waiver required for drug abuse?).
5. AFQT Category scale score.
6. Age at Application scale score.
7. Educational Credential scale score.
8. Auto-Shop standard score.
9. Arithmetic Reasoning standard score.
10. Coding Speed standard score.
11. General Science standard score.
12. Electrical Information standard score.
13. Math Knowledge standard score.

14. Mechanical Comprehension standard score.
15. Paragraph Comprehension standard score.
16. Numerical Operations standard score.
17. Word Knowledge standard score.
18. Verbal standard score.
19. Number of Dependents.
20. Marital Status/Number of Dependents.

The regression model may be written as

$$E = \beta_0' + \sum_{i=1}^{i=20} \beta_i' \, y_i + \epsilon, \qquad (3)$$

where E is a continuous employment variable from which the trichotomous employment variable is constructed. The $y_i$ are independent variables used to simulate E, $\epsilon$ is the linear regression error term, and $\beta_i'$ are the regression coefficients. Equation 3 introduces a significant error into the simulation of E. Because all 20 independent variables are poorly correlated with the ASAP employment variable, the model's multiple R is only .218. Thus, the model accounts for less the 5% of the variance in the dependent variable.

E was dichotomized by determining a cut score $e_c$ that enabled each non-Worker-B accession to be categorized as either employed or unemployed. All non-Worker-B accessions whose simulated E values were less than or equal to $e_c$ were considered unemployed and were assigned to the Employed Less Than 1 Month or Not Employed category. All other non-Worker-B accessions were considered employed and assigned to the Employed at Least 1 Month But Less Than 8 Months category.

Based upon responses to the ASAP employment status item, 64.5% of the Navy NHSDG accessions were unemployed. Under the assumption that the same proportion of NHSDG Navy accessions were unemployed in FY89, equation 3 was applied to all non-Worker-B accessions in the FY89 sample to simulate E scores. Since all Worker-B accessions were employed for 8 months or more, they were assigned an E score larger than the largest simulated E score in the non-Worker-B group. The cut score $e_c$ was then determined as the value on the simulated E distribution such that 64.5 percent of the simulated scores were less than or equal to $e_c$.

Employment Status scale values for the Employed Less Than 1 Month or Not Employed and Employed at Least 1 Month But Less Than 8 Months categories were calculated as the completion rates of the non-Worker-B accessions assigned to those two categories on the basis of their simulated E values. The scale value for the Employed 8 Months or More category is the completion rate for the Worker-B accessions.

All Adult Education and One Semester of College accessions were excluded from computation of the scale values because they belong to educational credential Tier I, whereas the Worker-B study was confined to Tiers II and III (see Figure 1). Consequently, no Adult Education and One Semester of College accessions were classified as Employed 8 Months or More during the Worker-B study.

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Adult Education and One Semester of College accessions were also excluded from development of the CSM because their inclusion would have influenced estimation of the logistic regression parameter for employment status and, therefore, would have affected the operational employment status weights. In addition, the FY85 ASAP data did not include individuals with Adult Education and One Semester of College credentials, because these credentials did not exist at the time. Consequently, the validity of the model in equation 3 for predicting the employment status of individuals with Adult Education and One Semester of College credentials is expected to be lower than for predicting the employment status of individuals in Tiers II and III.

The scale values determined from this procedure did not provide a sufficient difference between the Employed Less Than 1 Month or Not Employed and the Employed at Least 1 Month But Less Than 8 Months categories to satisfy BUPERS policy. Consequently, an administrative intervention set the Employed at Least 1 Month But Less Than 8 Months scale score at the approximate midpoint between the other two empirica"v ·· ·ved values. The final scale values are shown in Table 5.

Table 5

Employment Status Scale Values

| Employment Status | Scale Value | Sample Size |
|---|---|---|
| Employed Less Than 1 Month or Not Employed | .608 | 6,056 |
| Employed at Least 1 Month But Less Than 8 Months | .636[a] | 2,868 |
| Employed 8 Months or More | .665 | 436 |

[a]BUPERS policy intervention replaced the empirically derived value of .623 with a value approximately midway between the other two empirically derived values.

## Military Youth Program Participation

BUPERS policy required that military youth program participation be used as a predictor in the model. Programs considered military youth programs for the purposes of developing and validating the model are listed in Appendix C. The Youth Program scale values are displayed in Table 6.

Table 6

Military Youth Program Scale Values

| Youth Program Participation | Scale Value | Sample Size |
|---|---|---|
| No | .621 | 11,624 |
| Yes | .671 | 219 |

## Moral Waiver

BUPERS policy required that the applicant's need to obtain a moral waiver for enlistment be used as a predictor variable in the model. The types of waivers considered as "moral waivers" for the purposes of developing and validating the model are listed in Appendix C. The Moral Waiver scale values are shown in Table 7.

### Table 7

### Moral Waiver Scale Values

| Moral Waiver Status | Scale Value | Sample Size |
|---------------------|-------------|-------------|
| Moral Waiver required | .605 | 3,881 |
| No Moral Waiver required | .630 | 7,962 |

## Operational Test and Evaluation (OT&E)

The CSM OT&E began 1 July 1992. During the OT&E, the Navy Recruiting Command is using the CSM formula to screen NHSDG applicants. Recruiting personnel compute an applicant's operational CSM score using the NHSDG Application Form in Appendix B. Only those applicants whose CSM scores equal or exceed the CSM cut score are eligible for enlistment.

The cut score, which was set at 98 at the beginning of the OT&E, was determined using the following criteria:

1. The trade-off between the recruiting effort required to find applicants who satisfy the cut score and the overall quality of applicants who satisfy the cut score.

2. The expected completion rate of applicants who satisfy the cut score.

3. The expected quality of applicants who satisfy the cut score, as measured by their mean AFQT score and the proportions of applicants in the different education credential categories.

4. The expected impact of the cut score on the minority selection ratio, in comparison to the non-minority selection ratio.

The recruiter completes the NHSDG Application Form with the applicant's scores for each of the seven predictors. For each predictor, the recruiter selects the appropriate score on the form, based upon the applicant's status with respect to the criterion-referenced scale scores. The scores from which the recruiter must select are computed from the formula

$$\alpha_{k,j} = 100 \beta_k (x_{k,j} - x_{k,1}) \tag{4}$$

In equation 4, $\alpha_{k,j}$ represents the operational score for the jth category in the kth predictor variable ($k = 1, 2, \ldots, 7$ and $1 \leq j \leq j_k$, where $j_k$ is the number of categories in the kth predictor); $x_{k,j}$ is the jth scale score for the kth predictor variable, where it is assumed that the categories in each predictor are ordered so that $x_{k,1} < x_{k,2} < \ldots < x_{k,j_k}$; and $\beta_k$ is the logistic regression weight for the kth predictor. Each $\alpha_{k,j}$ computed from this formula is rounded to the nearest integer.

Equation 4 rescales the product of the logistic regression weight and the predictor scale scores so that the smallest product is 0 for each predictor variable. Multiplying the product by 100 before rounding eliminates the decimal point from the recruiter's calculations, while retaining enough significant digits to maintain precision. Consequently, the transformation simplifies the arithmetic required to complete the form without affecting the rank-ordering and selection of applicants.

Information gathered during the OT&E will be used to:

1. Develop an operational CSM based on employment status data collected in an operational environment and criterion data indicating whether the applicant completed 24 months of service.

2. Modify the operational CSM if an anticipated shift of the Adult Education and One Semester of College credential categories from Tier I to Tier II occurs.

3. Evaluate new predictors for possible inclusion in the operational CSM.

4. Monitor the demographic composition of the applicant population serviced during the OT&E to determine the extent to which it differs from the sample data used to develop the OT&E CSM.

5. Determine the extent to which Navy recruiters can improve their access to high quality NHSDG applicants without increasing their workload.

# Results and Discussion

## CSM Parameters

Table 8 lists the CSM parameters, the associated standard error estimates, and the $p$-values associated with each Wald chi-square statistic that is used to test whether the corresponding parameter is equal to zero (SAS Institute Inc., 1985). The parameters were computed from the FY89 accession sample, including the simulated employment status variable ($N = 9,360$). Since all predictor variables are positively correlated with the criterion, fulfillment of the face validity specification required positive logistic regression weights for all seven predictor variables.

## Descriptive Statistics and Validities

Table 9 provides sample sizes, completion rates, means and standard deviations of CSM scores, and validity coefficients for various subgroups in the FY88 accession sample ($N = 7,216$). Because the parameters were estimated using the entire FY89 accession sample, the CSM model was evaluated using the FY88 accession sample. As indicated in Table 9, the cross-validity of the CSM model was 0.12 ($p < .001$). As a baseline for comparison with the procedures currently used to select NHSDG applicants, the validity coefficients for AFQT percentile and SCREEN in the FY88 accession sample are .082 and .045 respectively ($p < .001$). Both validity increments produced by the CSM are significant at the .001 probability level.

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## Table 8

### CSM Parameters Used in the OT&E

| Predictor | Parameter | Standard Error | $p$-value |
|---|---|---|---|
| Constant | -17.054 | 2.716 | 0.000 |
| Education Credential | 2.615 | 1.085 | 0.016 |
| Years of Education | 3.851 | 0.590 | 0.000 |
| AFQT Category | 4.424 | 0.924 | 0.000 |
| Age at Application | 3.514 | 0.702 | 0.000 |
| Youth Program | 3.831 | 3.204 | 0.232 |
| Employment Status | 3.960 | 1.692 | 0.019 |
| Moral Waiver | 6.062 | 1.824 | 0.001 |

## Table 9

### Navy Subgroup Completion Rates, CSM Scores, and Validity Coefficients

| Subgroup | Sample Size | Completion Rate | CSM Score Mean | CSM Score Standard Deviation | Cross-Validity $r_{phis}$ | $p$ |
|---|---|---|---|---|---|---|
| NHSDG (Cell B) | | | | | | |
| **Educational Credential** | | | | | | |
| No Secondary Credential | 3,926 | .59 | 56.1 | 24.3 | .11 | .001 |
| General Education Development Diploma | 3,199 | .62 | 68.3 | 24.8 | .11 | .001 |
| Occupational Program Certificate | 47 | .89 | 150.0 | 18.1 | -.13 | .199 |
| High School Certificate of Attendance | 16 | .81 | 118.1 | 19.3 | -.01 | .480 |
| Home Study Diploma | 5 | .80 | 112.8 | 21.3 | -- | -- |
| Correspondence School Diploma | 3 | 1.00 | 75.7 | 6.5 | -- | -- |
| **Gender[a]** | | | | | | |
| Male | 7,189 | .61 | 62.3 | 26.3 | .12 | .001 |
| Female | 27 | .81 | 96.7 | 37.2 | .45 | .009 |
| **Race/Ethnicity[a] (Males)** | | | | | | |
| White | 5,424 | .60 | 62.5 | 26.9 | .13 | .001 |
| Hispanic | 951 | .65 | 60.9 | 24.7 | .08 | .007 |
| Black | 674 | .58 | 62.4 | 23.5 | .11 | .002 |
| Asian/Pacific Islander | 53 | .75 | 66.5 | 25.8 | .16 | .130 |
| American Indian/Aleutian | 35 | .34 | 59.5 | 20.7 | .04 | .404 |
| Total Sample[a] | 7,216 | .61 | 62.4 | 26.4 | .12 | .001 |
| HSDG (Cells A and C) | | | | | | |
| Adult Education[b] | 1,704 | .63 | 79.9 | 23.3 | .11 | .001 |
| One Semester of College[c] | 816 | .69 | 92.7 | 26.1 | .09 | .003 |

[a]Excludes Adult Education and One Semester of College.
[b]FY89 accessions.
[c]FY88 accessions.

Among the NHSDG education subgroups, the four credentials with small sample sizes showed higher completion rates and higher mean CSM scores than the No Secondary Credential and GED Diploma categories. However, given these sample size differences, only the No Secondary Credential and GED Diploma groups yielded significant CSM validities ($p < .01$). While the Adult Education and One Semester of College subgroups showed higher completion rates and higher mean CSM scores than the No Secondary Credential and GED Diploma subgroups, the aggregated completion rate and mean CSM score of the remaining NHSDG educational credential subgroups were higher than those of both HSDG subgroups (Table 9).

The small female sample had a higher completion rate, mean CSM score, and cross-validity than the male sample. Among the five male racial/ethnic subgroups, Asian/Pacific Islanders had the highest completion rates, CSM scores, and cross-validities while American Indians and Aleutians ranked lowest in these comparisons. However, results for these two subgroups were based on small sample sizes. Among the other three groups, Hispanics had a higher completion rate than blacks and whites but a lower mean CSM score and cross-validity. All three groups had significant validities ($p < .01$).

Absence of the proper employment status data in the FY88 model evaluation sample may limit the generalizability of these validity results. The observed validity of the CSM during the OT&E may differ from the estimates given here, because the employment status data used to develop and validate the CSM differ markedly from employment status as defined in the operational environment.

## Expectancy Comparison

Table 10 presents CSM expectancy analysis results based on various hypothetical CSM cut scores. As the percentage of excluded accessions increased, the percentage of correct acceptances (true positives) and erroneous rejections (false negatives) also increased. Correct acceptances exceeded erroneous rejections by at least 9% across all cut scores with the largest difference occurring at the current cut score of 98. The correct acceptance rate at the cut score exceeded the baseline correct acceptance rate by 13%. Appendix D lists the expectancy results over the entire CSM score range.

Table 11 provides an expectancy comparison between the SCREEN and CSM. The range of possible SCREEN cut scores limited the number of comparisons that could be made. At each cut score, the CSM achieved both a higher percentage of correct acceptances and a lower percentage of erroneous rejections than did SCREEN. As the percentage of excluded accessions increases, the difference between the percentage of correct acceptances predicted by SCREEN and CSM also increases. At the two highest cut scores (80 and 83), the CSM correct acceptance rates exceed those of SCREEN by over 7%.

## Differential Prediction and Adverse Impact

Differential prediction and adverse impact analyses were conducted to assess the fairness of applying the CSM formula and cut score to select minority applicants. Due to small sample sizes, only black, Hispanic, and white males were included in the differential prediction and adverse impact analyses.

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## Table 10

### Selection Accuracy of OT&E CSM

| CSM Cut Score | Accessions Excluded (%) | Completion Rate | |
| --- | --- | --- | --- |
| | | Correct Acceptances (%) | Erroneous Rejections (%) |
| 0 (baseline) | 0.0 | 60.7 | -- |
| 28 | 9.9 | 61.8 | 50.5 |
| 40 | 19.9 | 62.6 | 52.9 |
| 49 | 28.6 | 63.4 | 53.9 |
| 57 | 40.6 | 64.4 | 55.3 |
| 64 | 52.2 | 65.7 | 56.1 |
| 69 | 60.7 | 66.7 | 56.8 |
| 77 | 70.1 | 68.2 | 57.5 |
| 83 | 80.1 | 69.7 | 58.5 |
| 94 | 89.8 | 72.7 | 59.3 |
| 98 (OT&E) | 92.6 | 73.7 | 59.6 |

Note. FY88 Cell B Accessions (*N* = 7,216).

## Table 11

### Selection Accuracy of SCREEN vs. CSM

| SCREEN Cut Score | Excluded (%) | Completion Rate | | | |
| --- | --- | --- | --- | --- | --- |
| | | Correct Acceptances (%) | | Erroneous Rejections (%) | |
| | | SCREEN | CSM | SCREEN | CSM |
| 70 | 3.2 | 60.8 | 61.2 | 60.7 | 46.3 |
| 75 | 40.2 | 62.9 | 64.5 | 57.8 | 55.3 |
| 76 | 56.1 | 63.2 | 66.5 | 59.0 | 56.4 |
| 79 | 71.0 | 63.3 | 68.7 | 59.8 | 57.6 |
| 80 | 77.4 | 61.7 | 70.0 | 60.6 | 58.0 |
| 83 | 91.0 | 66.1 | 73.4 | 60.3 | 59.6 |

Note. FY88 Accession (NHSDG); *N* = 7,333.

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The focus of the differential prediction analyses was to determine if there are significant differences between the predicted completion rates of white and minority group members selected by the CSM. For this purpose, the following regression equations were developed from the FY88 Cell B accession sample to predict the completion rates of blacks, Hispanics, and whites.

| | | | | | |
|---|---|---|---|---|---|
| Blacks: | Comp24 | = | .002303 | (CSMscore) | +.435027 |
| Hispanics: | Comp24 | = | .001563 | (CSMscore) | +.556353 |
| Whites: | Comp24 | = | .002423 | (CSMscore) | +.451439 |

Figure 2 shows the completion rates that are predicted by the three equations for CSM scores from 0 to 220.
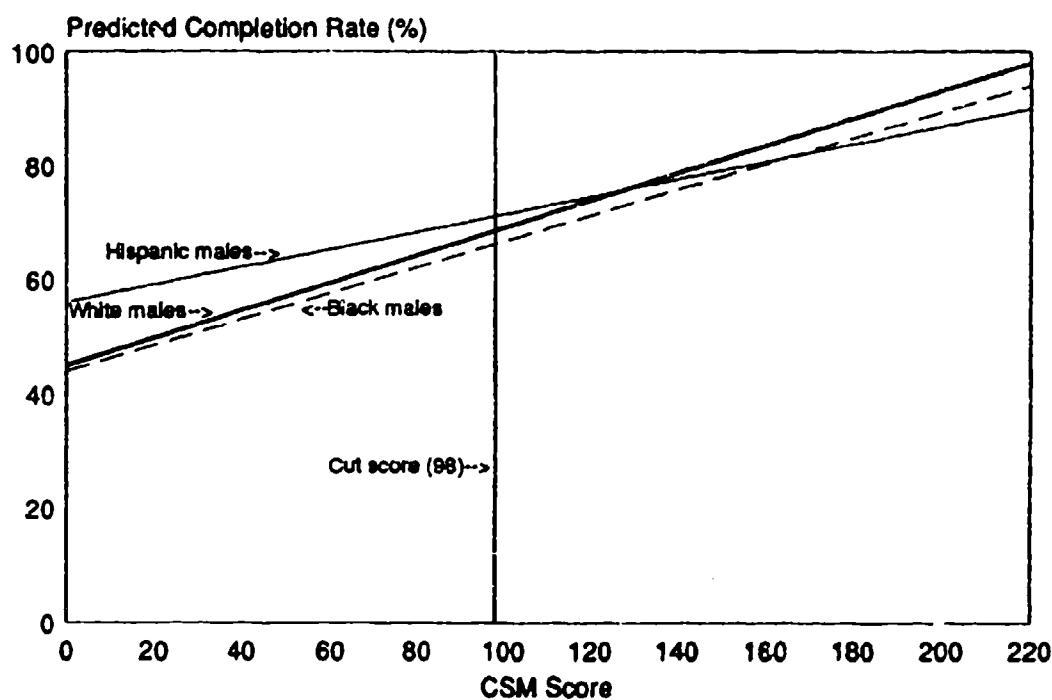


**Figure 2. Regression lines by racial/ethnic group.**

Moderated multiple regression was used to test for differences in the regression models (Devlin & Abrahams, 1990; Pedhazur, 1982). The slope and intercept of the black model did not differ significantly from those of the white model at the .05 level. As shown in Figure 2, the predicted completion rates of whites exceed those of blacks over the entire CSM score range. The difference in predicted completion rates ranges from 1% to 4% and increases slightly as CSM scores increase. At the current cut score of 98, the difference of 3% is not significant at the .05 level.

Although the difference in regression line slopes of the Hispanic and white equations was not significant, the difference in intercepts was significant ($p < .01$). However, this difference cannot be interpreted because the regression lines intersect. Figure 2 shows that completion rate estimates produced by the Hispanic model are larger than those produced by the white model at the lower

end of the CSM scale, but are smaller at the upper end. At the cut score, the 2% difference in predicted completion rates is not significant at the .05 level.

Table 12 compares the proportions of subgroup samples that were excluded by the CSM at various cut scores. At the OT&E cut score of 98, blacks and Hispanics would be hypothetically excluded at slightly higher rates than whites. The difference was statistically significant ($p < .05$) for the white-Hispanic comparison. The effect size index for the white-Hispanic difference was .09, which reflects a "small" difference (Cohen, 1988).

## Table 12

### CSM Racial/Ethnic Group Exclusion Rate Comparison

| CSM Cut Score | Total Excluded (%) | Racial/Ethnic Group Excluded (Males) (%) | | |
|:---:|:---:|:---:|:---:|:---:|
| | | Whites | Blacks | Hispanics |
| 0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 28 | 9.9 | 10.3 | 8.2 | 9.3 |
| 40 | 19.9 | 20.4 | 16.5 | 20.6 |
| 49 | 28.6 | 29.0 | 24.6 | 30.4 |
| 57 | 40.6 | 40.8 | 36.5 | 43.5 |
| 64 | 52.2 | 52.2 | 52.2 | 53.9 |
| 69 | 60.7 | 60.6 | 62.0 | 61.5 |
| 77 | 70.1 | 70.0 | 72.1 | 71.0 |
| 83 | 80.1 | 79.9 | 81.2 | 81.5 |
| 94 | 89.8 | 89.4 | 91.8 | 92.2 |
| 98 | 92.6 | 92.2 | 94.2 | 94.4 |

Note. FY88 Cell B Accessions ($N = 7,216$)

The correct acceptance (true positive) and erroneous rejection (false negative) rates of the three racial groups were compared by applying the CSM formula and cut score to the FY88 Cell B accession sample. The correct acceptance rate was significantly higher ($p < .05$) for white males (74.1%) than for black males (56.4%). The corresponding effect size index was .37, which reflects a difference approximately midway between "small" and "medium" (Cohen, 1988). The correct acceptance rate was higher for Hispanic males (81.1%) than for white males (74.1%), but the difference was not statistically significant at the .05 level. These findings concerning correct acceptance rates may be an artifact of the small numbers of black and Hispanic males (39 and 53, respectively) who satisfied the operational cut score.

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The difference in erroneous rejection rates between blacks and whites (58.0% and 59.1%, respectively) was not significant at the .05 level. The difference in erroneous rejection rates between Hispanics (64.1%) and whites was significant ($p < .01$). These results are more reliable than the correct acceptance results because the samples were larger (4999, 635, and 898 for whites, blacks, and Hispanics, respectively).

## Range Restriction Correction

The CSM parameters were estimated from an accession sample. However, because the CSM is used to select accessions from an applicant population, the parameter estimates are subject to error from restriction of range. There is no known technique to correct logistic regression parameter estimates for restriction in range directly. A linear approximation to logistic regression (SPSS Inc., 1988) can be used to estimate the effects of restriction in range. Such a procedure is based upon Lawley's methods for correcting a correlation matrix for range restriction (Lawley, 1943-44; Lord & Novick, 1968). However, this approach could not be applied to the FY88 and FY89 applicant samples, because the Lawley procedure requires that applicant data be available for all predictors in the model; moral waiver and military youth program participation predictor data were unavailable for the majority of applicants in these cohorts who did not subsequently enlist. Hence, the magnitude of the range restriction problem was examined by comparing accession and applicant sample means and standard deviations for the five predictor variables for which adequate applicant non-accession data exist in FY89. These data are shown in Table 13.

### Table 13

### Comparison of Predictor Variable Means and Standard Deviations Between FY89 Accession and Applicant Samples

| Predictor | Validity Coefficient | Means | | Standard Deviations | |
|---|---|---|---|---|---|
| | | Accessions | Applicants | Accessions | Applicants |
| Years of Education | .088* | .617 | .617 | .037 | .056 |
| Age at Application | .068* | .618 | .632 | .032 | .028 |
| AFQT Category | .053* | .624 | .619 | .025 | .023 |
| Education Credential | .042* | .626 | .625 | .021 | .019 |
| Employment Status | .029* | .619 | .620 | .016 | .015 |

*$p < .005$.

Table 13 shows that all five predictors are positively correlated with the criterion ($p < .005$). Therefore, if any predictors were exerting a meaningful range restriction effect, the mean of each predictor variable for the accession sample would be larger than the corresponding mean for the applicant sample and the standard deviation of each predictor in the accession sample would be smaller than the corresponding standard deviation for the applicant sample. However, each accession-sample standard deviation is larger than the corresponding applicant-sample standard

deviation, which is opposite to what would be e. pected if range restriction were present. The AFQT Category and Education Credential accession-sample means are larger than the corresponding applicant-sample means. However, as the differences are small in comparison to the sample standard deviations, any range restriction effect which may be present is small and therefore can be neglected. The ratios of the difference in means to the accession-sample standard deviation are .18 and .03 for AFQT Category and Education Credential, respectively.

## Conclusions

Use of the CSM can improve the quality of Navy NHSDG applicants who are selected for enlistment. Recruiting personnel can quickly and simply administer the seven-variable formula on a one-page NHSDG Application Form to determine enlistment eligibility.

Evaluation analyses demonstrate that the CSM formula produces significant increases in validity over those of both AFQT percentile and the SCREEN formula. CSM eligibles can therefore be expected to complete their enlistment contracts at a higher rate than usually expected for NHSDG recruits, providing that the cut score accepts only the highest quality applicants. At this high cut score, a small degree of adverse impact for black and Hispanic applicants may result. Analyses indicate that the parameter estimates are not significantly affected by restriction in range due to preselection of the accession sample. However, two factors may limit the generalizability of these conclusions: (1) the use of simulated employment data in evaluating the CSM and (2) the possibility that the CSM evaluation sample does not adequately represent the NHSDG applicant population to which the CSM will be applied.

## Recommendations

BUPERS-23 should monitor the applicant population during the OT&E to determine the extent to which it differs from the samples used to develop and evaluate the CSM. Data collected during the OT&E should be utilized to:

1. Revise the CSM according to operational results.

2. Monitor for adverse impact on minority groups.

3. Provide a normative population of NHSDG applicants.

4. If necessary, modify the cut score to adjust for differences between the OT&E applicant population and the CSM model development and model evaluation samples.

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# Appendix A

# Classification of Interservice Separation Codes

Following is a list of Interservice Separation Codes (ISC) encountered during development of the model, and their coding for purposes of computing the criterion.

| ISC | Meaning | Criterion Coding |
|-----|---------|------------------|
| 0 | Transaction (immediate re-enlistment, enlistment extension, dropped from rolls, record correction) or Unknown | 1 |

**Release from Active Service**

| ISC | Meaning | Criterion Coding |
|-----|---------|------------------|
| 1 | Expiration of Term of Service | 1 |
| 2 | Early Release - insufficient retainability | 1 |
| 3 | Early Release - to attend school | 1 |
| 4 | Early Release - police duty | 1 |
| 5 | Early Release - in the national interest | 1 |
| 6 | Early Release - seasonal employment | 1 |
| 7 | Early Release - to teach | 1 |
| 8 | Early Release - other (including RIF) | 1 |

**Medical Disqualifications**

| ISC | Meaning | Criterion Coding |
|-----|---------|------------------|
| 10 | Conditions Existing Prior to Service | 0 |
| 11 | Disability - Severance pay | 9 |
| 12 | Permanent Disability - Retired | 9 |
| 13 | Temporary Disability - Retired | 9 |
| 14 | Disability - non EPTS - No Severance Pay | 9 |
| 15 | Disability - Title 10 retirement | 9 |
| 16 | Unqualified for Active Duty - other | 0 |
| 17 | Failure to meet Weight/Body Standards | 0 |

**Dependency or Hardship**

| ISC | Meaning | Criterion Coding |
|-----|---------|------------------|
| 22 | Dependency or Hardship | 0 |

**Death**

| ISC | Meaning | Criterion Coding |
|-----|---------|------------------|
| 30 | Battle Casualty | 9 |
| 31 | Non-Battle - disease | 9 |
| 32 | Non-Battle - other | 9 |
| 33 | Death - cause not specified | 9 |

**Entry Into Officer Programs**

| ISC | Meaning | Criterion Coding |
|-----|---------|------------------|
| 40 | Officer Commissioning Program | 9 |
| 41 | Warrant Officer Program | 9 |
| 42 | Service Academy | 9 |

## Retirement (Other than Medical)

| 50 | 20-30 Years of Service | 9 |
| 51 | Over 30 Years of Service | 9 |
| 52 | Other Categories | 9 |

## Failure to Meet Minimum Behavioral or Performance Criteria

| 60 | Character or Behavior Disorder | 0 |
| 61 | Motivational Problems (Apathy) | 0 |
| 62 | Enuresis | 0 |
| 63 | Inaptitude | 0 |
| 64 | Alcoholism | 0 |
| 65 | Discreditable Incidents - Civilian or Military | 0 |
| 66 | Shirking | 0 |
| 67 | Drugs | 0 |
| 68 | Financial Irresponsibility | 0 |
| 69 | Lack of Dependent Support | 0 |
| 70 | Unsanitary Habits | 0 |
| 71 | Civil Court Conviction | 0 |
| 72 | Security | 0 |
| 73 | Court Martial | 0 |
| 74 | Fraudulent Entry | 0 |
| 75 | AWOL, Desertion | 0 |
| 76 | Homosexuality | 0 |
| 77 | Sexual Perversion | 0 |
| 78 | Good of the Service | 0 |
| 79 | Juvenile Offender | 0 |
| 80 | Misconduct (reason unknown) | 0 |
| 81 | Unfitness (reason unknown) | 0 |
| 82 | Unsuitability (reason unknown) | 0 |
| 83 | Pattern of Minor Disciplinary Infractions | 0 |
| 84 | Commission of a Serious Offense | 0 |
| 85 | Failure to Meet Minimum Qualifications for Retention | 0 |
| 86 | Expeditious Discharge | 0 |
| 87 | Trainee Discharge | 0 |

**Other Separations or Discharges**

| | | |
|---|---|---|
| 90 | Secretarial Authority | 9 |
| 91 | Erroneous Enlistment or Induction | 9 |
| 92 | Sole Surviving Son | 9 |
| 93 | Marriage | 0 |
| 94 | Pregnancy | 9 |
| 95 | Minority | 0 |
| 96 | Conscientious Objector | 0 |
| 97 | Parenthood | 0 |
| 98 | Breach of Contract | 9 |
| 99 | Other | 9 |
| 100 | Immediate Reenlistment | 1 |
| 101 | Dropped from Strength Rolls for Desertion | 0 |
| 102 | Dropped from Strength Rolls for Imprisonment | 0 |
| 103 | Record Correction | 9 |
| 104 | Missing in Action or Captured | 9 |
| 105 | Other Dropped from Strength Rolls | 0 |

# Appendix B

# NHSDG Application Form and Instructions

# NHSDG APPLICATION FORM
## COMPENSATORY SCREENING MODEL (CSM)

| NAME OF APPLICANT: (Last, First, Middle Initial) | SSN | DATE OF APPLICATION | NRD |
|---|---|---|---|

| | Score |
|---|---|

### 1. YEARS OF EDUCATION

| Less than 10 yrs | 0 | 11 yrs | 35 | |
|---|---|---|---|---|
| 10 yrs | 23 | 12 yrs or more | 47 | 1. |

### 2. EDUCATIONAL CREDENTIAL

| No Secondary Credential | 0 | One Semester College | 14 | |
|---|---|---|---|---|
| GED Equivalency | 4 | HS Certificate of Attendance | 25 | |
| Adult Education Diploma | 7 | Home Study Diploma | 43 | |
| Correspondence School | 11 | Occupational Certificate | 44 | 2. |

### 3. AGE

| 17 yrs | 0 | 19 yrs | 15 | | | |
|---|---|---|---|---|---|---|
| 18 yrs | 11 | 20 yrs | 32 | 21 yrs or Older | 24 | 3. |

**A**
### 4. EMPLOYMENT STATUS

| Employed less than 1 month or not employed | 0 | Employed 1 to 7 months | 11 | |
|---|---|---|---|---|
| | | Employed 8 months or more | 23 | 4. |

**B**
### 5. YOUTH PROGRAM

| No Youth Program | 0 | Youth Program | 19 | 5. |
|---|---|---|---|---|

**C**
### 6. MORAL WAIVER

| Waiver Required | 0 | No Waiver | 15 | 6. |
|---|---|---|---|---|

| SUBTOTAL (add lines 1 through 6) | 7. |
|---|---|

| Subtract Subtotal (line 7) from 98 to determine Minimum AFQT Category Score required for further processing. If difference is less than zero, write zero. | **Minimum CSM Score** | **98** |
|---|---|---|
| | SUBTOTAL (from line 7) → | − |
| | Minimum AFQT Category Score Required | 8. |

| AFQT CATEGORY | EST Category Score (Preliminary) | AFQT Category Score |
|---|---|---|
| CAT IIIA [ 0 ]   CAT II [ 18 ]   CAT I [ 61 ] | 9. | 10. |

If EST / AFQT Category Score (line 9 or line 10) is greater than or equal to Minimum AFQT Category Score (line 8), applicant is CSM-eligible for further processing.

**D**

| Compensatory Screening Model (CSM) Score (add lines 7 and 10) | 11. |
|---|---|

B-1

## Non-High School Diploma Graduate (NHSDG)
## Application Form - Introduction and Instructions

## Introduction

Over the years, the Navy has used two measures of recruit quality---achievement on the Armed Forces Qualification Test (AFQT) and educational attainment. AFQT score measures trainability---how well an individual will perform in training. Educational attainment, or more specifically, the attainment of a high school diploma, measures adaptability---how likely is the applicant to complete an obligated term of service.

About 25 percent of young men and women do not complete a traditional high school program. In general, a nongraduate is twice as likely to fail to complete a term of service. However, some nongraduates go on to be successful sailors. The problem---how to better identify those who will succeed? In this regard, the Navy conducted years of research in pursuit of a better measure of adaptability. Results from this research suggested specific questions that were related to adaptability of non-high school diploma graduates. As a result, the Navy developed a short screening questionnaire for non-high school graduate applicants. The basic questionnaire consists of seven verifiable items. To ensure the selection of non-high school graduate applicants who are likely to adapt to military service successfully, the Navy will conduct an operational test and evaluation of the non-high school graduate application screen.

The recruiter should have all Non-High School Diploma Graduate (NHSDG) applicants fill out the NHSDG Questionnaire and Applicant Checklist. The recruiter may then use the results from these forms to complete the NHSDG Application Form to determine the enlistment eligibility of non-prior service active-duty applicants who do not have a traditional high school diploma.[1] The NHSDG Application Form is used to calculate the **Compensatory Screening Model (CSM) Score**. The CSM Score is directly related to the likelihood that the applicant will complete 2 years of service. **A nongraduate applicant must achieve a CSM Score at or above 98 to be eligible for enlistment. In addition to CSM eligibility, nongraduate applicants must also score at or above 50 on the Armed Forces Qualification Test (AFQT) to qualify for enlistment.**

NHSDG Application Forms must also be completed for those applicants whose educational credential is classified as a high school graduate (Tier 1) as a result of completing at least one semester of college (NHSDG) or earning an Adult Education Diploma. However, the CSM Score for these applicants will not affect enlistment eligibility.

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[1] Specifically, the NHSDG Application Form shall apply to applicants whose educational level is classified as belonging in Tier 2 (Alternative Credential) or Tier 3 (Non-High School Graduate). See Appendix A on pages 14-15 for complete definitions.

The CSM Score is based upon the applicant's status with respect to the following predictors. In all cases, the applicant must present verifiable evidence for each of the seven predictors before further processing can be accomplished.

(1)     YEARS OF EDUCATION COMPLETED:  If an applicant has completed 10 or more years of education, evidence must be presented that meets the requirements of CRUITMAN-ENL, COMNAVCRUITCOM NOTE 1133, and ENLISTED POLICY-GRAMS.

(2)     EDUCATION CREDENTIAL:  If the applicant possesses an alternative credential, evidence must be presented that meets the requirements of CRUITMAN-ENL, COMNAVCRUITCOM NOTE 1133, and ENLISTED POLICY-GRAMS.

(3)     AGE:  Age is the applicant's age in years on the date of his most recent birthday, as of the date of application.  Evidence of age must meet the requirements of CRUITMAN-ENL.

(4)     EMPLOYMENT STATUS: Applicant are awarded points according to whether they are employed and how long they have been employed. Those who are not employed or have been employed less than 30 days are considered "Employed less than one month or not employed." Applicants who have been employed at least 30 days, but less than eight months are classified as "Employed 1 to 7 months." Applicants who have been employed eight months or more are considered "Employed 8 months or more." **Applicants are considered employed for a given length of time (i.e., 30 days or eight months) if they have been continuously employed by the same employer during the length of time immediately prior to the date of application.** "Continuously employed" means that there cannot be any periods of unemployment during the employment period. The duration of continuous employment by the same employer must be documented by either:

(a)     A signed letter on the employer's business stationary stating the date on which the applicant was hired and certifying that he was continuously employed between the hiring date and the date of application, or

(b)     Pay stubs showing continuous employment by the same employer during the 30-day period ending on the date of application.

(5)     MILITARY YOUTH PROGRAM PARTICIPATION:  Applicants who have participated in a military youth program must present a certificate of participation or a signed letter as evidence of participation.  Following is a list of eligible programs:

Junior ROTC - 3 & 4 year programs
ROTC - 1, 2, 3, & 4 year programs
Civil Air Patrol - Spaatz Award
Civil Air Patrol - Earhart Award
Civil Air Patrol - Mitchell Award
U.S. Naval Sea Cadet - Recruit

U.S. Naval Sea Cadet - Apprentice
U.S. Naval Sea Cadet - Seaman

(6) MORAL WAIVER STATUS: Moral Waiver status indicates whether the applicant requires a moral waiver to enlist. The following are considered "moral waivers" for the purpose of computing the CSM Score.

Minor Traffic Offenses                Felony As A Juvenile/Youthful Offender
Minor Nontraffic Offenses             Preservice Drug Abuse
Other (Nonminor) Misdemeanors         Preservice Alcohol Abuse
Felony As An Adult

(7) AFQT CATEGORY (MENTAL GROUP): Most applicants will not have previously taken the Armed Services Vocational Aptitude Battery (ASVAB). In this event, the Enlistment Screening Test (EST) may be administered to estimate a preliminary CSM Score. A final CSM Score must be based on the AFQT resulting from a valid ASVAB score.

## Instructions to Recruiters

### 1. Part I - NHSDG Questionnaire and Checklist

Recruiters should first have all nongraduate prospects complete the NHSDG Questionnaire and Checklist. Successful research depends upon having complete information. Therefore, it is imperative that recruiters ensure that these forms are completed fully and accurately.

The recruiter should ask the applicant to read the NHSDG Questionnaire Instructions and complete the NHSDG Questionnaire & Checklist (shown on pages 11-13). Responses to all research questions will be used to improve future versions of the NHSDG Application Form. They will not affect the determination of CSM-eligibility to enlist. You do not need to verify the applicant's responses at the time he fills out the questionnaire. However, the recruiter should encourage the applicant to answer the questions honestly.

The questions cover the information needed to support the CSM --- education, family situation, employment history, and law violations. The applicant should fill out the questionnaire and checklist before you initiate a NHSDG Application Form. The information from the questionnaire can be used as a preliminary determination of the need for a moral waiver, employment status, and educational background.

When the questionnaire and checklist have been completed, the recruiter should verify that the applicant has provided all requested information. The recruiter should confirm with the applicant the response to "How many months have you been employed at your present job?" The accuracy of this response should also be confirmed after proof of employment status has been provided by the applicant.

### 2. Part 2 - Computation of CSM Score

The recruiter uses the NHSDG Application Form to compute the CSM Score. The recruiter should print the applicant's name, Social Security Account Number (SSN), date of application (i.e., today's date), and Navy Recruiting District (NRD) code in the spaces provided at the top of the NHSDG Application Form. Determining an applicant's CSM Score is a five-step process. A sample NHSDG Application Form is shown on page 10.

(1)   First, the recruiter should determine the applicant's status with respect to each of the seven predictors except AFQT Category (Mental Group) and write the corresponding scores in boxes 1 through 6 on the right-hand side of the application form.

(2)   Next, the recruiter adds the six scores to determine the Subtotal. This quantity should be recorded in the box 7 labeled *Subtotal (add lines 1 through 6)* and next to the minus sign in box 8.

(3)     Subtract the Subtotal from the Minimum CSM Score (98) and record the result in box 8. The difference represents the minimum number of AFQT Category (Mental Group) score points required to be CSM-eligible for enlistment. If the difference is less than zero, write "0" in box 8.

(4)     Next, the recruiter must determine the applicant's AFQT Category (Mental Group) score. A preliminary estimate of AFQT Category Score can be based on results from the Enlistment Screening Test (EST). However, **final determination of CSM qualification must be based on a valid ASVAB score.** Mental Groups and corresponding AFQT percentile and AFQT Category Score used in calculating the CSM score are shown below:

| Mental Group | AFQT Percentiles | AFQT Category Score |
|---|---|---|
| I | 93-99 | 61 |
| II | 65-92 | 18 |
| IIIA | 50-64 | 0 |

When based on EST, the preliminary score should be recorded in box 9. Otherwise, a score based on a valid ASVAB should be recorded in box 10. If the score is greater than or equal to the Minimum AFQT Category Score Required (box 8), then the applicant is CSM-qualified for further processing.

(5)     Calculate the CSM Score by adding boxes 7 and 10, entering the result in box 11. **If the applicant does not take an ASVAB, box 11 should be left blank.** If the CSM Score is greater than the Minimum CSM Score (98), the applicant is eligible for further processing.

Verifiable evidence is unnecessary to make a preliminary estimate of qualification. However, the recruiter must include it in the enlistment package when an applicant is sent to the Military Entrance Processing Station (MEPS) for medical testing.

The preceding steps are illustrated by the following example. Consider an applicant who has indicated his status is as follows:

| | |
|---|---|
| **Years of Education:** | 12 years completed |
| **Educational Credential:** | high school certificate of attendance |
| **Age:** | 20 years old |
| **Employment Status:** | continuously employed for 4 months by same employer |
| **Youth Program:** | not a participant |
| **Moral Waiver:** | moral waiver not required |
| **AFQT Category:** | Estimated AFQT of 68 (CAT II), based on |
| **(Mental Group)** | EST. |
| | AFQT of 63 (CAT IIIA), based on ASVAB. |

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A completed form for this applicant is shown on page 10. It will be useful to refer to it while reading the following paragraphs.

STEP 1 - The recruiter determines the applicant's predictor scores by recording the scores that correspond to the applicant's status.

Years of Education (line 1): The applicant has completed 12 years of education. In Block 1, Years of Education, 12 years of education corresponds to a score of 47. The recruiter writes "47" in the "Score" column in box 1.

Educational Credential (line 2): In Block 2, Educational Credential, a high school certificate of attendance corresponds to a score of 25. The recruiter writes "25" in the "Score" column in box 2.

Age (line 3): The applicant is 20 years old. Since this age corresponds to a score of 32, the recruiter writes "32" in the "Score" column in box 3.

Employment (line 4): The applicant has been employed four months continuously with the same employer. The recruiter writes "11" in the "Score" column in box 4 since "11" is the score for employed more than 30 days but less than eight months continuously with one employer.

Youth Program (line 5): Since the applicant did not participate in a military youth program, the recruiter enters a "0" in the "Score" column in box 5.

Moral Waiver (line 6): The applicant does not require a moral waiver to enlist, so the recruiter enters a score of "15" in the "Score" column in box 6.

STEP 2 - Compute Subtotal score (line 7): The recruiter adds the scores in boxes 1 through 6 (47 + 25 + 32 + 11 + 0 + 15 = 130) and enters this sum (130) in box 7 and next to the minus sign (-) in box 8.

STEP 3 - Determine the Minimum AFQT Score Required (line 8): The recruiter subtracts the quantity in box 7 from the minimum CSM Score to determine the Minimum AFQT Category (Mental Group) Score required to be CSM-qualified for enlistment. Since the difference (98 - 130 = -32) is less than zero, a "0" should be recorded in box 8. This applicant is CSM-qualified for ASVAB and medical testing at the MEPS.

If an applicant needs 1-18 points (CAT II) or 19-61 points (CAT I) to be CSM-qualified, recruiters can use their judgment or EST results to decide on processing the applicant further. When in doubt, an EST should be administered to obtain an estimated AFQT Percentile Score.

If an applicant requires more than 61 additional points, the applicant is disqualified.

**STEP 4 - Determine AFQT Category (Mental Group) score (lines 9 & 10):** The applicant scored a 68 on the EST. This corresponds to AFQT Category (Mental Group) II and a score of 18 is recorded in box 9. Since this score is not less than "0", the Minimum AFQT Category Score Required (box 8), the applicant was allowed to continue processing and take the ASVAB.

The applicant achieved a 63 AFQT which is in Mental Group IIIA. AFQT Category (Mental Group) IIIA corresponds to a score of zero (0). A "0" is recorded in box 10. Since zero equals or exceeds the Minimum AFQT Category Score Required (box 8), this applicant is CSM-qualified for enlistment. **In addition to CSM-qualification, nongraduate applicants (Tier 2 and 3) must attain an AFQT 50 or above to qualify for enlistment.**

**STEP 5 - Determine the Compensatory Screening Model (CSM) Score:** The final step for the recruiter is to add the values in boxes 7 and 10 to determine the CSM Score[2] and enter it in box 11. Box 7 contains 130 and box 10 contains 0. Therefore, the applicant's CSM Score is 130 (130 + 0). Since 130 is greater than the minimum requirement of 98, the applicant is CSM-qualified for further processing into the Navy.

## 3. Disposition of Completed NHSDG Application Forms and Questionnaires

After the NHSDG Application Form and NHSDG Questionnaire have been completed, the recruiter should staple the application form on top of the questionnaire so they do not become separated. If an enlistment package is made, the original of both forms should be included as part of the enlistment package. The recruiter should make a photocopy of these forms to keep with NHSDG Application Forms and Questionnaires that are not forwarded as part of an enlistment package. By the fifth day of each month, these completed forms shall be forwarded to the Enlisted Programs Officer (EPO) or his/her designated representative for your recruiting district.

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[2] A final CSM Score must be based on a valid ASVAB-based AFQT. An estimated AFQT based on the EST cannot be used in step 5.

## Instructions to Classifiers

Recruiters are required to complete the Non-High School Diploma Grad ate (NHSDG) Application Form for all non-prior service active-duty applicants who do not ha e a traditional high school diploma. The NHSDG Application Form is used to calculate the Compensatory Screening Model (CSM) Score. **A nongraduate must achieve a minimum CSM Score of 98 and score at or above 50 on the Armed Forces Qualification Test (AFQT) to qualify for enlistment.** NHSDG Application Forms must also be completed for those applicants whose educational credential is classified as a high school graduate (Tier 1) as a result of completing at least one semester of college (NHSDG) or earning an Adult Education Diploma. However, the CSM Score for these applicants will not affect their enlistment eligibility.

The NHSDG Application Form, NHSDG Questionnaire, and supporting documentation (e.g., school transcripts, alternate credential, proof of employment) are to be included as part of the enlistment package. The classifier should:

(1)   Verify that the documentation in the applicant's enlistment package adequately supports the scores in boxes 1 through 6, and 9 and 10 on the NHSDG Application Form. For example, the hypothetical applicant described on page 5 had completed 12 years of formal education. Accordingly, the recruiter entered a score of "47" in the Years of Education block. The classifier must verify that the applicant has supplied a school transcript that confirms completion of at least 12 years of education. Documented proof is required for each element in the NHSDG Application Form.

(2)   ONBRD, ONBRDR and the PRIDE program will prompt you for scores and supporting data from the application form and questionnaire. Enter these values between the slashes and under the appropriate heading as follows:

EMPSTA/YTHPGM/MORWAV/RECRCON/JOBMOS/TICKETS/SUSPEN/FELONY/ MISDEM/ LIVEWTH

| Prompt | Box | Meaning |
|--------|-----|---------|
| EMPSTA | A/4 | Employment status |
| YTHPGM | B/5 | Youth program |
| MORWAV | C/6 | Moral waiver |
| RECRCON | E | How was your first contact with the recruiter established? |
| JOBMOS | F | How many months have you been employed at your present job? |
| TICKETS | G | How many traffic or parking tickets did you get in the past year? |
| SUSPEN | H | Have your ever been suspended or expelled from school? |
| FELONY | I | Have you ever been arrested for a felony? |
| MISDEM | J | Have you ever been arrested for a misdemeanor? |
| LIVEWTH | K | With whom are you living? |

(3)    After these values are entered, PRIDE will edit them and then calculate and display the following scores automatically:

| Pride Header | Box | Meaning |
| --- | --- | --- |
| YEARSED | 1 | Years of education |
| EDCRED | 2 | Education credential |
| AGE | 3 | Age (calculated from birth date to enlistment date) |
| AFQTCAT | 10 | AFQT Category (mental group) |
| CSMSCOR | D/11 | Compensatory Screening Model (CSM) score |

(4)    The GETREC program has been modified to print out these scores for your convenience. They should be used to verify the accuracy of the scores recorded by the recruiter in the boxes on the NHSDG Application Form. Make pen and ink changes to the form if necessary, and notify the recruiter of any changes you make.

(5)    NOTE: If the civilian education is changed via the CHGACC program, the CSM scores will remain the same, as entered during the initial reservation session.

### Instructions for Enlisted Programs Officers

By the fifteenth day of the month, the EPO (or designated representative) shall mail all NHSDG Application Forms and NHSDG Questionnaires received from recruiters to the following address:

Commanding Officer
NAVPERSRANDCEN
Attn: Code 122(CSM Project)
271 Catalina Blvd.
San Diego, CA 92152-6800

## SAMPLE

# NHSDG APPLICATION FORM
## COMPENSATORY SCREENING MODEL (CSM)

| NAME OF APPLICANT: (Last, First, Middle Initial) | SSN | DATE OF APPLICATION | NRD |
|---|---|---|---|
| DOE, JOHN P. | 999-99-9999 | June 15, 1992 | |

**Score**

**1. YEARS OF EDUCATION**

| Less than 10 yrs | 0 | 11 yrs | 35 | 1. 47 |
|---|---|---|---|---|
| 10 yrs | 23 | 12 yrs or more | 47 | |

**2. EDUCATIONAL CREDENTIAL**

| No Secondary Credential | 0 | One Semester College | 14 | |
|---|---|---|---|---|
| GED Equivalency | 4 | HS Certificate of Attendance | 25 | |
| Adult Education Diploma | 7 | Home Study Diploma | 43 | 2. 25 |
| Correspondence School | 11 | Occupational Certificate | 44 | |

**3. AGE**

| 17 yrs | 0 | 19 yrs | 25 | | | |
|---|---|---|---|---|---|---|
| 18 yrs | 11 | 20 yrs | 32 | 21 yrs or Older | 24 | 3. 32 |

A

**4. EMPLOYMENT STATUS**

| Employed less than 1 month or not employed | 0 | Employed 1 to 7 months | 11 | 4. 11 |
|---|---|---|---|---|
| | | Employed 8 months or more | 23 | |

B

**5. YOUTH PROGRAM**

| No Youth Program | 0 | Youth Program | 19 | 5. 0 |
|---|---|---|---|---|

C

**6. MORAL WAIVER**

| Waiver Required | 0 | No Waiver | 15 | 6. 15 |
|---|---|---|---|---|

| SUBTOTAL (add lines 1 through 6) | 7. 130 |
|---|---|

| Subtract Subtotal (line 7) from 98 to determine Minimum AFQT Category Score required for further processing. If difference is less than zero, write zero. | **Minimum CSM Score** | 98 |
|---|---|---|
| | **SUBTOTAL (from line 7)** → | − 130 |
| | Minimum AFQT Category Score Required | 8. 0 |

| AFQT CATEGORY | EST Category Score (Preliminary) | AFQT Category Score |
|---|---|---|
| CAT IIIA  0    CAT II  18    CAT I  61 | 9.  18 | 10.  0 |

If EST / AFQT Category Score (line 9 or line 10) is greater than or equal to Minimum AFQT Category Score (line 8), applicant is CSM-eligible for further processing.

D

| Compensatory Screening Model (CSM) Score (add lines 7 and 10) | 11.  130 |
|---|---|

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# NHSDG Questionnaire

| NAME OF APPLICANT: (Last, First, Middle Initial) | SSN | Today's Date | NRD |
|---|---|---|---|
| | | | |

**Instructions:**

Print your name, social security number, today's date, and the Navy Recruiting District (NRD) code on both pages of the questionnaire. (Ask your recruiter for the NRD code.) For the multiple choice questions, choose the best answer and write it in the space provided.

Under "Arrests", space is provided for up to six offenses. List your arrests in chronological order, beginning with the most recent and working backward. Indicate the date and general nature of the offense (shop-lifting, auto theft, public intoxication, etc.) If a moving traffic violation was involved, indicate the type of violation (speeding, reckless driving, driving while intoxicated, etc.)

Under "Employment History", space is provided for up to six previous jobs. List your employers and your corresponding starting and ending dates of employment in chronological order, beginning with the present job and working backward.

E  **How was your first contact with the recruiter established?**

(a) The recruiter called me first
(b) I visited or contacted the recruiter first

Answer: _____

F  **How many months have you been employed at your present job?**

(If not employed, write "0". If employed less than one month, write "1".)

Months: _____

G  **How many traffic or parking tickets did you get in the past year?**

(a) Four or more    (d) One
(b) Three    (e) Zero
(c) Two

Answer: _____

H  **Have you ever been suspended or expelled from school?**

(a) No    (d) Yes, 3 times
(b) Yes, once    (e) Yes, 4 times or more
(c) Yes, twice

Answer: _____

I  **Have you ever been arrested for a felony?**

(a) Yes, but I wasn't convicted
(b) Yes, and I was convicted
(c) No

Answer: _____

J  **Have you ever been arrested for a misdemeanor?**

(a) Yes, but I wasn't convicted
(b) Yes, and I was convicted
(c) No    Answer: _____

**ARRESTS**

- *The answers you provide in this section may affect your enlistment eligibility.*
- *You must list all arrest information regardless of whether you have previously listed or disclosed this information or whether the record in your case has been "sealed", expunged, or otherwise stricken from the court record.*

| Yes | No | |
|---|---|---|
| | | a. Have you ever been arrested, charged, cited, held, or detained by Federal, State, or other law enforcement or juvenile authorities, regardless of whether the charge was dropped or dismissed, or you were found not guilty? |

b. List details of "Yes" answers

| (1) Date (Month/Year) | (2) Nature of Offense or Violation | (1) Date (Month/Year) | (2) Nature of Offense or Violation |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

# NHSDG Questionnaire (cont'd)

| NAME OF APPLICANT: (Last, First, Middle Initial) | SSN | Today's Date | NRD |
|---|---|---|---|
| | | | |

## Employment History

Including your present job, how many jobs have you held? _____

How old were you when you got your first job? _____

*List in chronological order, beginning with the present, each period of employment, part or full time. List inclusive dates for each period.*

| a. Dates (Month/Year) | | b. Name of Employer | a. Dates (Month/Year) | | b. Name of Employer |
|---|---|---|---|---|---|
| (1) From | (2) To | | (1) From | (2) To | |
| | Present | | | | |
| | | | | | |
| | | | | | |

**K** **With whom are you living?**

(a) both your biological (natural) parents     (e) adoptive parents     (i) on your own

(b) a biological parent and a step parent     (f) a relative, guardian or friend     (j) with my spouse

(c) a single male parent     (g) in a foster home or a county/state/church facility     (k) other

(d) a single female parent     (h) at a school dorm or a shared rental for school

**Answer:** _____

# NHSDG Applicant Checklist

| NAME OF APPLICANT: (Last, First, Middle Initial) | SSN | Today's Date | NRD |
|---|---|---|---|
| | | | |

1. Check the box that indicates the number of **Years of Education** you have completed.

| Less than 10 yrs | ☐ | 11 yrs | ☐ |
|---|---|---|---|
| 10 yrs | | 12 yrs or more | |

2. Check the box that indicates the most recent **Education Credential** you have completed.

| No Secondary Credential | ☐ | One Semester College | ☐ |
|---|---|---|---|
| GED Equivalency | | HS Certificate of Attendance | |
| Adult Education Diploma | ☐ | Home Study Diploma | ☐ |
| Correspondence School | | Occupational Certificate | |

3. Check the box that indicates your **Age** on your most recent birthday.

| 17 yrs | ☐ | 19 yrs | ☐ | 21 yrs or older | ☐ |
|---|---|---|---|---|---|
| 18 yrs | | 20 yrs | | | |

4. Check the box that indicates the number of months you have been **employed** at your present job.

| Employed less than 1 month or not employed | ☐ | Employed 1 to 7 months | ☐ |
|---|---|---|---|
| | | Employed 8 months or more | |

5. If you have participated in any of the following **Military Youth Programs**, circle the program you participated in and check the box at the right.

Junior ROTC - 3 or 4 year programs
ROTC - 1, 2, 3 or 4 year programs
Civil Air Patrol - Spaatz Award
Civil Air Patrol - Earhart Award          Participated in
Civil Air Patrol - Mitchell Award         Youth Program     ☐
U.S. Naval Sea Cadet - Recruit
U.S. Naval Sea Cadet - Apprentice
U.S. Naval Sea Cadet - Seaman

6. If you have ever been arrested or issued a citation for any of the following, circle the offense(s) and check the box at the right.

Minor Traffic Offense
Minor Nontraffic Offense
Other (Nonminor) Misdemeanor
Felony as an Adult                         Waiver Required    ☐
Felony as a Juvenile/Youthful Offender
Preservice Alcohol Abuse
Preservice Drug Abuse

7. Recruiter Comments:

# DEFINITIONS OF EDUCATIONAL CREDENTIALS

## TIER 1: HIGH SCHOOL GRADUATE

High School Diploma: A diploma issued to an individual who has attended and completed a 12-year or grade day program of classroom instruction; the diploma must be issued from the school where the individual completed all the program requirements.

Completed One Semester of College: The status of an individual who is a non-high school graduate or alternate high school credential holder, attended a college or university, and completed at least 15 semester or 22 quarter hours of college-level credit. Credit earned through testing, for pursuit of high school equivalency preparation, is not applicable. In addition, credit must be earned at a school accredited by one of the following agencies: New England Association of College and Secondary Schools; Middle States Association of Colleges and Secondary Schools; North Central Association of Colleges and Secondary Schools; Northwest Association of Secondary and Higher Schools; Southern Association of Colleges and Schools; and Western Association of Schools and Colleges.

Adult Education Diploma: A secondary school diploma awarded on the basis of attending and completing an adult education or "external" diploma program, regardless of whether the diploma was issued by a state or by a secondary or postsecondary educational institution.

## TIER 2: ALTERNATIVE CREDENTIAL HOLDER

Test-Based Equivalency Diploma: A diploma or certificate of general educational development (GED) or other test-based high school equivalency diploma. This includes state-wide testing programs such as the California High School Proficiency Examination (CHSPE), whereby examinees may earn a certificate of competency or proficiency. A state or locally issued secondary school diploma obtained solely on the basis of such equivalency testing is not to be considered a high school diploma. This is considered an alternate high school credential.

High School Certificate of Attendance: An attendance-based certificate or diploma. These are sometimes called certificates of competency or completion, but are based on course completion rather than a test such as the GED or CHSPE. A state or locally issued secondary school diploma obtained solely on the basis of an attendance credential is not considered a high school diploma. This is considered an alternate high school credential.

Correspondence School Diploma: A secondary school diploma or certificate awarded upon completion of correspondence school coursework, regardless of whether the diploma was issued by a correspondence school, a state, or secondary or postsecondary educational institution. This is considered an alternate high school credential.

<u>Occupational Program Certificate</u>:   A certificate or diploma awarded for attending a non-correspondence vocational, technical, or proprietary school for at least 6 months.   An individual so designated must also have completed 11 years of regular day school.   This is considered an alternate high school credential.

<u>Home Study Diploma</u>:   A secondary school diploma or certificate, typically awarded by a state, based upon certification by a parent or guardian that an individual completed his/her secondary education at home.   This is considered an alternate high school credential.

## TIER 3: NON-HIGH SCHOOL GRADUATE

Status of an individual who is not currently attending high school and who is neither a high school graduate nor an alternate high school credential holder.

# Non-High School Diploma Graduate (NHSDG) Application Form
## Recruiter's Quick Reference Checklist

All nongraduate applicants must be screened using the Non-High School Diploma Graduate (NHSDG) Application Form. The NHSDG Application Form is used to calculate the Compensatory Screening Model (CSM) Score. A nongraduate applicant must achieve a CSM Score at or above 98 and also attain a minimum AFQT score of 50 to qualify for enlistment.

NHSDG Application Forms must also be completed for applicants classified as a high school graduate as a result of (1) completing at least one semester of college, or (2) earning an Adult Education Diploma. However, the CSM Score for these applicants will not affect enlistment eligibility. Once you determine that an applicant does not have a traditional high school diploma, you should:

(1)  Have the applicant complete the NHSDG Questionnaire & Checklist. All nongraduate and nontraditional HSDGs must fill out the NHSDG Questionnaire and Checklist. The recruiter should then review these to identify candidates for further processing.

(2)  Complete the top portion of the NHSDG Application Form. Print the applicant's name, Social Security Account Number (SSN), date of application (i.e., today's date), and Navy Recruiting District (NRD) code in the spaces provided at the top of the NHSDG Application Form. Then determine the applicant's status for each factor except AFQT Category (Mental Group). Write the corresponding scores in boxes 1 through 6 in the column labeled "Score" on the right-hand side of the application form.

(3)  Add the six scores to determine the Subtotal. Record this in box 7 and next to the minus sign above the line in box 8.

(4)  Subtract the Subtotal from the Minimum CSM Score (98). If the difference is less than zero, write "0". Otherwise, record the result in box 8. This represents the minimum number of additional CSM score points required to be CSM-eligible for enlistment. If this is greater than 61, the applicant is not eligible. Skip to step 9.

(5)  Determine the AFQT Category. All nongraduate applicants must score at or above 50 on the AFQT to be eligible for enlistment. Applicants who score in Mental Group I and II earn addition CSM Score points. Mental Groups and corresponding AFQT percentile and AFQT Category scores are shown below:

| Mental Group | AFQT Percentiles | AFQT Category Score |
| --- | --- | --- |
| I | 93-99 | 61 |
| II | 65-92 | 18 |
| IIIA | 50-64 | 0 |

A preliminary determination of AFQT Category can be made using the EST. However, final enlistment eligibility must be based on an AFQT score. EST Category Score points should be recorded in box 9. ASVAB-based score points should be recorded in box 10.

(6)  Calculate the CSM Score. Add boxes 7 and 10 and record the results in box 11. If the applicant did not take an ASVAB, box 11 should be left blank. The CSM Score must be greater than the Minimum CSM Score (98) and the AFQT percentile score must be 50 or greater for an applicant to be eligible for further enlistment processing.

(7)  Obtain documentation on CSM predictors. Get evidence for each factor before further processing. The NHSDG Questionnaire and Checklist, NHSDG Application Form, and documentation must be included in the enlistment package.

(8)  Make copies of forms. For those applicants that require an enlistment package, make a photocopy of the NHSDG Application Form and NHSDG Questionnaire and Checklist.

(9)  Forms disposition. Keep all fully or partially completed NHSDG Questionnaires and Checklists, and NHSDG Application Forms. Completed NHSDG Application Forms should be stapled on top of NHSDG Questionnaires. By the 5th day of the month, the forms should be forwarded to the EPO (or a designated representative).

# Appendix C

# Military Youth Program and Moral Waiver Definitions

Following is a list of eligible Military Youth Programs:

Junior ROTC - 3 & 4 year programs
ROTC - 1, 2, 3, & 4 year programs
Civil Air Patrol - Spaatz Award
Civil Air Patrol - Earhart Award
Civil Air Patrol - Mitchell Award
U.S Naval Sea Cadet - Recruit
U.S Naval Sea Cadet - Apprentice
U.S Naval Sea Cadet - Seamen

The following types of waivers are considered "moral waivers" for the purpose of developing the CSM:

Minor Traffic Offenses
Minor Nontraffic Offenses
Other (Nonminor) Misdemeanors
Felony As An Adult
Felony As A Juvenile/Youthful Offender
Preservice Drug Abuse
Preservice Alcohol Abuse

# Appendix D

## CSM Expectancy Table

$\underline{N} = 7,216$

MINIMUM SCORE = 0        MAXIMUM SCORE = 221

EXPECTANCY TABLE

| CSM Score | Prop. Excl. | Select. Ratio | Hit Rate | Correct Accept. | Error. Accept. | Correct Reject. | Error. Reject. | N |
|---|---|---|---|---|---|---|---|---|
| 221 | 0.9999 | 0.0001 | 0.3932 | 1.0000 | 0.0000 | 0.3931 | 0.6069 | 1 |
| 220 | 0.9999 | 0.0001 | | | | | | 0 |
| 219 | 0.9999 | 0.0001 | | | | | | 0 |
| 218 | 0.9999 | 0.0001 | | | | | | 0 |
| 217 | 0.9999 | 0.0001 | | | | | | 0 |
| 216 | 0.9999 | 0.0001 | | | | | | 0 |
| 215 | 0.9999 | 0.0001 | | | | | | 0 |
| 214 | 0.9999 | 0.0001 | | | | | | 0 |
| 213 | 0.9999 | 0.0001 | | | | | | 0 |
| 212 | 0.9999 | 0.0001 | | | | | | 0 |
| 211 | 0.9999 | 0.0001 | | | | | | 0 |
| 210 | 0.9999 | 0.0001 | | | | | | 0 |
| 209 | 0.9999 | 0.0001 | | | | | | 0 |
| 208 | 0.9999 | 0.0001 | | | | | | 0 |
| 207 | 0.9999 | 0.0001 | | | | | | 0 |
| 206 | 0.9999 | 0.0001 | | | | | | 0 |
| 205 | 0.9999 | 0.0001 | | | | | | 0 |
| 204 | 0.9999 | 0.0001 | | | | | | 0 |
| 203 | 0.9999 | 0.0001 | | | | | | 0 |
| 202 | 0.9999 | 0.0001 | | | | | | 0 |
| 201 | 0.9999 | 0.0001 | | | | | | 0 |
| 200 | 0.9999 | 0.0001 | | | | | | 0 |
| 199 | 0.9999 | 0.0001 | | | | | | 0 |
| 198 | 0.9999 | 0.0001 | | | | | | 0 |
| 197 | 0.9999 | 0.0001 | | | | | | 0 |
| 196 | 0.9999 | 0.0001 | | | | | | 0 |
| 195 | 0.9999 | 0.0001 | | | | | | 0 |

# EXPECTANCY TABLE

| CSM Score | Prop. Excl. | Select. Ratio | Hit Rate | Correct Accept. | Error. Accept. | Correct Reject. | Error. Reject. | N |
|---|---|---|---|---|---|---|---|---|
| 194 | 0.9999 | 0.0001 | | | | | | 0 |
| 193 | 0.9999 | 0.0001 | | | | | | 0 |
| 192 | 0.9999 | 0.0001 | | | | | | 0 |
| 191 | 0.9997 | 0.0003 | 0.3933 | 1.0000 | 0.0000 | 0.3931 | 0.6069 | 1 |
| 190 | 0.9997 | 0.0003 | | | | | | 0 |
| 189 | 0.9997 | 0.0003 | | | | | | 0 |
| 188 | 0.9997 | 0.0003 | | | | | | 0 |
| 187 | 0.9996 | 0.0004 | 0.3934 | 1.0000 | 0.0000 | 0.3932 | 0.6068 | 1 |
| 186 | 0.9996 | 0.0004 | | | | | | 0 |
| 185 | 0.9996 | 0.0004 | | | | | | 0 |
| 184 | 0.9996 | 0.0004 | | | | | | 0 |
| 183 | 0.9996 | 0.0004 | | | | | | 0 |
| 182 | 0.9996 | 0.0004 | | | | | | 0 |
| 181 | 0.9994 | 0.0006 | 0.3933 | 0.7500 | 0.2500 | 0.3931 | 0.6069 | 1 |
| 180 | 0.9994 | 0.0006 | | | | | | 0 |
| 179 | 0.9994 | 0.0006 | | | | | | 0 |
| 178 | 0.9994 | 0.0006 | | | | | | 0 |
| 177 | 0.9994 | 0.0006 | | | | | | 0 |
| 176 | 0.9994 | 0.0006 | | | | | | 0 |
| 175 | 0.9994 | 0.0006 | | | | | | 0 |
| 174 | 0.9994 | 0.0006 | | | | | | 0 |
| 173 | 0.9994 | 0.0006 | | | | | | 0 |
| 172 | 0.9994 | 0.0006 | | | | | | 0 |
| 171 | 0.9994 | 0.0006 | | | | | | 0 |
| 170 | 0.9994 | 0.0006 | | | | | | 0 |
| 169 | 0.9994 | 0.0006 | | | | | | 0 |
| 168 | 0.9994 | 0.0006 | | | | | | 0 |
| 167 | 0.9992 | 0.0008 | 0.3930 | 0.5000 | 0.5000 | 0.3929 | 0.6071 | 2 |
| 166 | 0.9992 | 0.0008 | | | | | | 0 |
| 165 | 0.9992 | 0.0008 | | | | | | 0 |
| 164 | 0.9992 | 0.0008 | | | | | | 0 |
| 163 | 0.9989 | 0.0011 | 0.3933 | 0.6250 | 0.3750 | 0.3930 | 0.6070 | 2 |
| 162 | 0.9988 | 0.0012 | 0.3934 | 0.6667 | 0.3333 | 0.3931 | 0.6069 | 1 |
| 161 | 0.9988 | 0.0012 | | | | | | 0 |
| 160 | 0.9988 | 0.0012 | | | | | | 0 |
| 159 | 0.9975 | 0.0025 | 0.3944 | 0.7778 | 0.2222 | 0.3934 | 0.6066 | 9 |
| 158 | 0.9974 | 0.0026 | 0.3945 | 0.7895 | 0.2105 | 0.3935 | 0.6065 | 1 |

# EXPECTANCY TABLE

| CSM Score | Prop. Excl. | Select. Ratio | Hit Rate | Correct Accept. | Error. Accept. | Correct Reject. | Error. Reject. | N |
|---|---|---|---|---|---|---|---|---|
| 157 | 0.9972 | 0.0028 | 0.3947 | 0.8000 | 0.2000 | 0.3936 | 0.6064 | 1 |
| 156 | 0.9964 | 0.0036 | 0.3955 | 0.8462 | 0.1538 | 0.3939 | 0.6061 | 6 |
| 155 | 0.9963 | 0.0037 | 0.3956 | 0.8519 | 0.1481 | 0.3939 | 0.6061 | 1 |
| 154 | 0.9961 | 0.0039 | 0.3955 | 0.8214 | 0.1786 | 0.3939 | 0.6061 | 1 |
| 153 | 0.9961 | 0.0039 | | | | | | 0 |
| 152 | 0.9960 | 0.0040 | 0.3956 | 0.8276 | 0.1724 | 0.3939 | 0.6061 | 1 |
| 151 | 0.9958 | 0.0042 | 0.3955 | 0.8000 | 0.2000 | 0.3938 | 0.6062 | 1 |
| 150 | 0.9954 | 0.0046 | 0.3959 | 0.8182 | 0.1818 | 0.3940 | 0.6060 | 3 |
| 149 | 0.9947 | 0.0053 | 0.3963 | 0.8158 | 0.1842 | 0.3941 | 0.6059 | 5 |
| 148 | 0.9938 | 0.0052 | 0.3973 | 0.8444 | 0.1556 | 0.3945 | 0.6055 | 7 |
| 147 | 0.9932 | 0.0068 | 0.3979 | 0.8571 | 0.1429 | 0.3947 | 0.6053 | 4 |
| 146 | 0.9931 | 0.0069 | 0.3980 | 0.8600 | 0.1400 | 0.3948 | 0.6052 | 1 |
| 145 | 0.9931 | 0.0069 | | | | | | 0 |
| 144 | 0.9927 | 0.0073 | 0.3984 | 0.8679 | 0.1321 | 0.3949 | 0.6051 | 3 |
| 143 | 0.9924 | 0.0076 | 0.3984 | 0.8545 | 0.1455 | 0.3949 | 0.6051 | 2 |
| 142 | 0.9924 | 0.0076 | | | | | | 0 |
| 141 | 0.9915 | 0.0085 | 0.3990 | 0.8525 | 0.1475 | 0.3951 | 0.6049 | 6 |
| 140 | 0.9907 | 0.0093 | 0.3998 | 0.8657 | 0.1343 | 0.3954 | 0.6046 | 6 |
| 139 | 0.9904 | 0.0096 | 0.4001 | 0.8696 | 0.1304 | 0.3956 | 0.6044 | 2 |
| 138 | 0.9903 | 0.0097 | 0.4002 | 0.8714 | 0.1286 | 0.3956 | 0.6044 | 1 |
| 137 | 0.9897 | 0.0103 | 0.4005 | 0.8649 | 0.1351 | 0.3957 | 0.6043 | 4 |
| 136 | 0.9895 | 0.0105 | 0.4002 | 0.8421 | 0.1579 | 0.3955 | 0.6045 | 2 |
| 135 | 0.9889 | 0.0111 | 0.3999 | 0.8125 | 0.1875 | 0.3953 | 0.6047 | 4 |
| 134 | 0.9886 | 0.0114 | 0.3999 | 0.8049 | 0.1951 | 0.3953 | 0.6047 | 2 |
| 133 | 0.9871 | 0.0129 | 0.4001 | 0.7742 | 0.2258 | 0.3952 | 0.6048 | 11 |
| 132 | 0.9870 | 0.0130 | 0.4002 | 0.7766 | 0.2234 | 0.3953 | 0.6047 | 1 |
| 131 | 0.9868 | 0.0132 | 0.4001 | 0.7684 | 0.2316 | 0.3952 | 0.6048 | 1 |
| 130 | 0.9861 | 0.0139 | 0.4002 | 0.7600 | 0.2400 | 0.3952 | 0.6048 | 5 |
| 129 | 0.9859 | 0.0141 | 0.4002 | 0.7549 | 0.2451 | 0.3951 | 0.6049 | 2 |
| 128 | 0.9853 | 0.0147 | 0.4002 | 0.7453 | 0.2547 | 0.3951 | 0.6049 | 4 |
| 127 | 0.9848 | 0.0152 | 0.4005 | 0.7455 | 0.2545 | 0.3952 | 0.6048 | 4 |
| 126 | 0.9841 | 0.0159 | 0.4009 | 0.7478 | 0.2522 | 0.3953 | 0.6047 | 5 |
| 125 | 0.9838 | 0.0162 | 0.4012 | 0.7521 | 0.2479 | 0.3954 | 0.6046 | 2 |
| 124 | 0.9828 | 0.0172 | 0.4016 | 0.7500 | 0.2500 | 0.3955 | 0.6045 | 7 |
| 123 | 0.9821 | 0.0179 | 0.4020 | 0.7519 | 0.2481 | 0.3957 | 0.6043 | 5 |
| 122 | 0.9807 | 0.0193 | 0.4029 | 0.7554 | 0.2446 | 0.3959 | 0.6041 | 10 |
| 121 | 0.9805 | 0.0195 | 0.4033 | 0.7589 | 0.2411 | 0.3960 | 0.6040 | 2 |

# EXPECTANCY TABLE

| CSM Score | Prop. Excl. | Select. Ratio | Hit Rate | Correct Accept. | Error. Accept. | Correct Reject. | Error. Reject. | N |
|---|---|---|---|---|---|---|---|---|
| 120 | 0.9795 | 0.0205 | 0.4038 | 0.7635 | 0.2365 | 0.3963 | 0.6037 | 7 |
| 119 | 0.9780 | 0.0220 | 0.4045 | 0.7610 | 0.2390 | 0.3965 | 0.6035 | 11 |
| 118 | 0.9777 | 0.0223 | 0.4045 | 0.7578 | 0.2422 | 0.3965 | 0.6035 | 2 |
| 117 | 0.9774 | 0.0226 | 0.4048 | 0.7607 | 0.2393 | 0.3966 | 0.6034 | 2 |
| 116 | 0.9764 | 0.0236 | 0.4055 | 0.7647 | 0.2353 | 0.3968 | 0.6032 | 7 |
| 115 | 0.9746 | 0.0254 | 0.4059 | 0.7541 | 0.2459 | 0.3968 | 0.6032 | 13 |
| 114 | 0.9738 | 0.0262 | 0.4065 | 0.7566 | 0.2434 | 0.3970 | 0.6030 | 6 |
| 113 | 0.9735 | 0.0265 | 0.4067 | 0.7592 | 0.2408 | 0.3972 | 0.6028 | 2 |
| 112 | 0.9719 | 0.0281 | 0.4078 | 0.7635 | 0.2365 | 0.3975 | 0.6025 | 12 |
| 111 | 0.9694 | 0.0306 | 0.4081 | 0.7466 | 0.2534 | 0.3974 | 0.6026 | 18 |
| 110 | 0.9687 | 0.0313 | 0.4085 | 0.7478 | 0.2522 | 0.3976 | 0.6024 | 5 |
| 109 | 0.9666 | 0.0334 | 0.4098 | 0.7510 | 0.2490 | 0.3980 | 0.6020 | 15 |
| 108 | 0.9602 | 0.0398 | 0.4120 | 0.7387 | 0.2613 | 0.3985 | 0.6015 | 46 |
| 107 | 0.9552 | 0.0448 | 0.4145 | 0.7399 | 0.2601 | 0.3992 | 0.6008 | 36 |
| 106 | 0.9539 | 0.0461 | 0.4148 | 0.7357 | 0.2643 | 0.3992 | 0.6008 | 10 |
| 105 | 0.9521 | 0.0479 | 0.4155 | 0.7341 | 0.2659 | 0.3994 | 0.6006 | 13 |
| 104 | 0.9430 | 0.0570 | 0.4223 | 0.7567 | 0.2433 | 0.4021 | 0.5979 | 65 |
| 103 | 0.9399 | 0.0601 | 0.4241 | 0.7581 | 0.2419 | 0.4027 | 0.5973 | 23 |
| 102 | 0.9379 | 0.0621 | 0.4254 | 0.7612 | 0.2388 | 0.4032 | 0.5968 | 14 |
| 101 | 0.9335 | 0.0665 | 0.4271 | 0.7562 | 0.2438 | 0.4037 | 0.5963 | 32 |
| 100 | 0.9285 | 0.0715 | 0.4285 | 0.7481 | 0.2519 | 0.4039 | 0.5961 | 36 |
| 99 | 0.9272 | 0.0728 | 0.4286 | 0.7448 | 0.2552 | 0.4038 | 0.5962 | 9 |
| 98 | 0.9256 | 0.0744 | 0.4284 | 0.7374 | 0.2626 | 0.4035 | 0.5965 | 12 |
| 97 | 0.9159 | 0.0841 | 0.4325 | 0.7348 | 0.2652 | 0.4048 | 0.5952 | 70 |
| 96 | 0.9065 | 0.0935 | 0.4361 | 0.7304 | 0.2696 | 0.4057 | 0.5943 | 68 |
| 95 | 0.9024 | 0.0976 | 0.4379 | 0.7301 | 0.2699 | 0.4063 | 0.5937 | 29 |
| 94 | 0.8984 | 0.1016 | 0.4392 | 0.7271 | 0.2729 | 0.4066 | 0.5934 | 29 |
| 93 | 0.8841 | 0.1159 | 0.4446 | 0.7225 | 0.2775 | 0.4082 | 0.5918 | 103 |
| 92 | 0.8765 | 0.1235 | 0.4464 | 0.7160 | 0.2840 | 0.4084 | 0.5916 | 55 |
| 91 | 0.8726 | 0.1274 | 0.4480 | 0.7160 | 0.2840 | 0.4089 | 0.5911 | 28 |
| 90 | 0.8592 | 0.1408 | 0.4504 | 0.7037 | 0.2963 | 0.4089 | 0.5911 | 97 |
| 89 | 0.8478 | 0.1522 | 0.4559 | 0.7067 | 0.2933 | 0.4109 | 0.5891 | 82 |
| 88 | 0.8430 | 0.1570 | 0.4583 | 0.7079 | 0.2921 | 0.4118 | 0.5882 | 35 |
| 87 | 0.8409 | 0.1591 | 0.4595 | 0.7091 | 0.2909 | 0.4123 | 0.5877 | 15 |
| 86 | 0.8265 | 0.1735 | 0.4623 | 0.6997 | 0.3003 | 0.4125 | 0.5875 | 104 |
| 85 | 0.8168 | 0.1832 | 0.4673 | 0.7027 | 0.2973 | 0.4145 | 0.5855 | 70 |
| 84 | 0.8113 | 0.1887 | 0.4690 | 0.7012 | 0.2988 | 0.4149 | 0.5851 | 40 |

# EXPECTANCY TABLE

| CSM Score | Prop. Excl. | Select. Ratio | Hit Rate | Correct Accept. | Error. Accept. | Correct Reject. | Error. Reject. | N |
|---|---|---|---|---|---|---|---|---|
| 83 | 0.8009 | 0.1991 | 0.4713 | 0.6966 | 0.3034 | 0.4153 | 0.5847 | 75 |
| 82 | 0.7894 | 0.2106 | 0.4770 | 0.6993 | 0.3007 | 0.4177 | 0.5823 | 83 |
| 81 | 0.7772 | 0.2228 | 0.4831 | 0.7021 | 0.2979 | 0.4203 | 0.5797 | 88 |
| 80 | 0.7705 | 0.2295 | 0.4839 | 0.6981 | 0.3019 | 0.4201 | 0.5799 | 48 |
| 79 | 0.7404 | 0.2596 | 0.4951 | 0.6967 | 0.3033 | 0.4245 | 0.5755 | 217 |
| 78 | 0.7129 | 0.2871 | 0.4989 | 0.6844 | 0.3156 | 0.4242 | 0.5758 | 199 |
| 77 | 0.7015 | 0.2985 | 0.5017 | 0.6820 | 0.3180 | 0.4249 | 0.5751 | 82 |
| 76 | 0.6960 | 0.3040 | 0.5003 | 0.6764 | 0.3236 | 0.4233 | 0.5767 | 40 |
| 75 | 0.6736 | 0.3264 | 0.5073 | 0.6752 | 0.3248 | 0.4260 | 0.5740 | 161 |
| 74 | 0.6544 | 0.3456 | 0.5114 | 0.6712 | 0.3288 | 0.4269 | 0.5731 | 139 |
| 73 | 0.6508 | 0.3492 | 0.5133 | 0.6722 | 0.3278 | 0.4280 | 0.5720 | 26 |
| 72 | 0.6366 | 0.3634 | 0.5175 | 0.6712 | 0.3288 | 0.4297 | 0.5703 | 102 |
| 71 | 0.6215 | 0.3785 | 0.5195 | 0.6672 | 0.3328 | 0.4297 | 0.5703 | 109 |
| 70 | 0.6146 | 0.3854 | 0.5206 | 0.6656 | 0.3344 | 0.4298 | 0.5702 | 50 |
| 69 | 0.6066 | 0.3934 | 0.5248 | 0.6675 | 0.3325 | 0.4323 | 0.5677 | 58 |
| 68 | 0.5904 | 0.4096 | 0.5302 | 0.6675 | 0.3325 | 0.4350 | 0.5650 | 117 |
| 67 | 0.5671 | 0.4329 | 0.5341 | 0.6629 | 0.3371 | 0.4357 | 0.5643 | 168 |
| 66 | 0.5524 | 0.4476 | 0.5377 | 0.6616 | 0.3384 | 0.4373 | 0.5627 | 106 |
| 65 | 0.5424 | 0.4576 | 0.5391 | 0.6596 | 0.3404 | 0.4374 | 0.5626 | 72 |
| 64 | 0.5222 | 0.4778 | 0.5430 | 0.6569 | 0.3431 | 0.4387 | 0.5613 | 146 |
| 63 | 0.4970 | 0.5030 | 0.5479 | 0.6540 | 0.3460 | 0.4406 | 0.5594 | 182 |
| 62 | 0.4882 | 0.5118 | 0.5509 | 0.6542 | 0.3458 | 0.4425 | 0.5575 | 63 |
| 61 | 0.4554 | 0.5446 | 0.5563 | 0.6499 | 0.3501 | 0.4443 | 0.5557 | 237 |
| 60 | 0.4310 | 0.5690 | 0.5601 | 0.6469 | 0.3531 | 0.4457 | 0.5543 | 176 |
| 59 | 0.4207 | 0.5793 | 0.5624 | 0.6462 | 0.3538 | 0.4470 | 0.5530 | 74 |
| 58 | 0.4169 | 0.5831 | 0.5632 | 0.6459 | 0.3541 | 0.4475 | 0.5525 | 28 |
| 57 | 0.4058 | 0.5942 | 0.5637 | 0.6437 | 0.3563 | 0.4467 | 0.5533 | 80 |
| 56 | 0.3884 | 0.6116 | 0.5678 | 0.6429 | 0.3571 | 0.4495 | 0.5505 | 125 |
| 55 | 0.3837 | 0.6163 | 0.5678 | 0.6418 | 0.3582 | 0.4489 | 0.5511 | 34 |
| 54 | 0.3775 | 0.6225 | 0.5676 | 0.6402 | 0.3598 | 0.4479 | 0.5521 | 45 |
| 53 | 0.3617 | 0.6383 | 0.5707 | 0.6392 | 0.3608 | 0.4498 | 0.5502 | 114 |
| 52 | 0.3474 | 0.6526 | 0.5747 | 0.6392 | 0.3608 | 0.4535 | 0.5465 | 103 |
| 51 | 0.3304 | 0.6696 | 0.5771 | 0.6374 | 0.3626 | 0.4547 | 0.5453 | 123 |
| 50 | 0.3154 | 0.6846 | 0.5826 | 0.6385 | 0.3615 | 0.4613 | 0.5387 | 108 |
| 49 | 0.2858 | 0.7142 | 0.5845 | 0.6341 | 0.3659 | 0.4607 | 0.5393 | 214 |
| 48 | 0.2741 | 0.7259 | 0.5884 | 0.6346 | 0.3654 | 0.4661 | 0.5339 | 84 |
| 47 | 0.2695 | 0.7305 | 0.5888 | 0.6340 | 0.3660 | 0.4663 | 0.5337 | 33 |

| CSM Score | Prop. Excl. | Select. Ratio | Hit Rate | Correct Accept. | Error. Accept. | ⌣. ↱ | ⌣. ↱⌣.⌐ | N |
|---|---|---|---|---|---|---|---|---|
| 46 | 0.2508 | 0.7492 | 0.5923 | 0.6330 | 0.3670 | 0.4707 | 0.5293 | 135 |
| 45 | 0.2432 | 0.7568 | 0.5913 | 0.6310 | 0.3690 | 0.4678 | 0.5322 | 55 |
| 44 | 0.2316 | 0.7684 | 0.5922 | 0.6296 | 0.3704 | 0.4680 | 0.5320 | 84 |
| 43 | 0.2220 | 0.7780 | 0.5917 | 0.6277 | 0.3723 | 0.4657 | 0.5343 | 69 |
| 42 | 0.2152 | 0.7848 | 0.5935 | 0.6278 | 0.3722 | 0.4688 | 0.5312 | 49 |
| 41 | 0.2061 | 0.7939 | 0.5971 | 0.6286 | 0.3714 | 0.4761 | 0.5239 | 66 |
| 40 | 0.1993 | 0.8007 | 0.5953 | 0.6263 | 0.3737 | 0.4708 | 0.5292 | 49 |
| 39 | 0.1940 | 0.8060 | 0.5953 | 0.6255 | 0.3745 | 0.4700 | 0.5300 | 38 |
| 38 | 0.1638 | 0.8362 | 0.5992 | 0.6233 | 0.3767 | 0.4763 | 0.5237 | 218 |
| 37 | 0.1551 | 0.8449 | 0.5991 | 0.6219 | 0.3781 | 0.4745 | 0.5255 | 63 |
| 36 | 0.1517 | 0.8483 | 0.5994 | 0.6216 | 0.3784 | 0.4749 | 0.5251 | 24 |
| 35 | 0.1465 | 0.8535 | 0.5996 | 0.6210 | 0.3790 | 0.4749 | 0.5251 | 38 |
| 34 | 0.1297 | 0.8703 | 0.6012 | 0.6196 | 0.3804 | 0.4776 | 0.5224 | 121 |
| 33 | 0.1221 | 0.8779 | 0.6010 | 0.6185 | 0.3815 | 0.4756 | 0.5244 | 55 |
| 32 | 0.1218 | 0.8782 | 0.6007 | 0.6183 | 0.3817 | 0.4744 | 0.5256 | 2 |
| 31 | 0.1218 | 0.8782 | | | | | | 0 |
| 30 | 0.1135 | 0.8865 | 0.6021 | 0.6179 | 0.3821 | 0.4786 | 0.5214 | 60 |
| 29 | 0.1077 | 0.8923 | 0.6030 | 0.6176 | 0.3824 | 0.4813 | 0.5187 | 42 |
| 28 | 0.0994 | 0.9006 | 0.6060 | 0.6182 | 0.3818 | 0.4951 | 0.5049 | 60 |
| 27 | 0.0970 | 0.9030 | 0.6064 | 0.6182 | 0.3818 | 0.4971 | 0.5029 | 17 |
| 26 | 0.0751 | 0.9249 | 0.6078 | 0.6161 | 0.3839 | 0.5055 | 0.4945 | 158 |
| 25 | 0.0723 | 0.9277 | 0.6070 | 0.6153 | 0.3847 | 0.5000 | 0.5000 | 20 |
| 24 | 0.0708 | 0.9292 | 0.6074 | 0.6154 | 0.3846 | 0.5029 | 0.4971 | 11 |
| 23 | 0.0621 | 0.9379 | 0.6092 | 0.6152 | 0.3848 | 0.5179 | 0.4821 | 63 |
| 22 | 0.0583 | 0.9417 | 0.6104 | 0.6155 | 0.3845 | 0.5297 | 0.4703 | 27 |
| 21 | 0.0583 | 0.9417 | | | | | | 0 |
| 20 | 0.0583 | 0.9417 | | | | | | 0 |
| 19 | 0.0525 | 0.9475 | 0.6099 | 0.6145 | 0.3855 | 0.5277 | 0.4723 | 42 |
| 18 | 0.0496 | 0.9504 | 0.6098 | 0.6140 | 0.3860 | 0.5279 | 0.4721 | 21 |
| 17 | 0.0496 | 0.9504 | | | | | | 0 |
| 16 | 0.0496 | 0.9504 | | | | | | 0 |
| 15 | 0.0225 | 0.9775 | 0.6086 | 0.6103 | 0.3897 | 0.5370 | 0.4630 | 196 |
| 14 | 0.0225 | 0.9775 | | | | | | 0 |
| 13 | 0.0225 | 0.9775 | | | | | | 0 |
| 12 | 0.0225 | 0.9775 | | | | | | 0 |
| 11 | 0.0114 | 0.9886 | 0.6084 | 0.6089 | 0.3911 | 0.5610 | 0.4390 | 80 |
| 10 | 0.0114 | 0.9886 | | | | | | 0 |

# EXPECTANCY TABLE

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| CSM Score | Prop. Excl. | Select. Ratio | Hit Rate | Correct Accept. | Error. Accept. | Correct Reject. | Error. Reject. | N |
|---|---|---|---|---|---|---|---|---|
| 9 | 0.0114 | 0.9886 | | | | | | 0 |
| 8 | 0.0114 | 0.9886 | | | | | | 0 |
| 7 | 0.0114 | 0.9886 | | | | | | 0 |
| 6 | 0.0114 | 0.9886 | | | | | | 0 |
| 5 | 0.0114 | 0.9886 | | | | | | 0 |
| 4 | 0.0087 | 0.9913 | 0.6082 | 0.6086 | 0.3914 | 0.5714 | 0.4286 | 19 |
| 3 | 0.0087 | 0.9913 | | | | | | 0 |
| 2 | 0.0087 | 0.9913 | | | | | | 0 |
| 1 | 0.0087 | 0.9913 | | | | | | 0 |
| 0 | 0.0000 | 1.0000 | 0.6070 | 0.6070 | 0.3930 | 0.0000 | 0.0000 | 63 |

Note: Prop. Excl. = Proportion Excluded; Select. = Selection; Accept. = Acceptance; Erron. = Erroneous; Reject. = Rejection.

## Distribution List

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Deputy Assistant Secretary (OASD) (P&R)
Chief of Naval Personnel (PERS-23), (PERS-234)
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